TRUSCON

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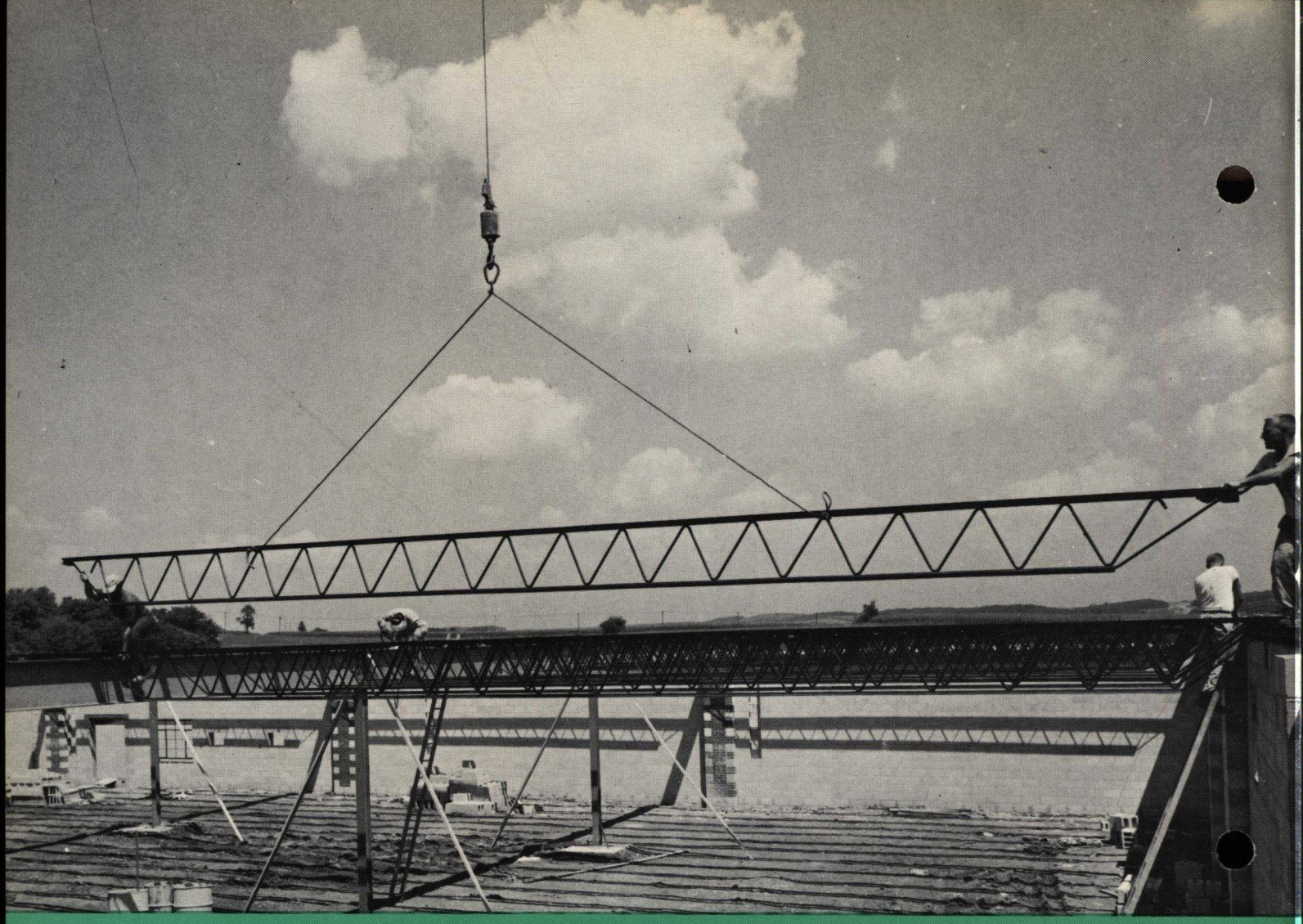
SERIES "J"

"O-T" Open Truss® Steel Joists

SERIES "LA"

Clerespan® Steel Joists

REPUBLIC STEEL CORPORATION
TRUSCON DIVISION
YOUNGSTOWN 5, OHIO



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REPUBLIC STEEL CORPORATION, TRUSCON DIVISION

YOUNGSTOWN 5, OHIO

TRUSCON J-SERIES
"O-T" OPEN TRUSS STEEL JOISTS

J-SERIES

LA-SERIES

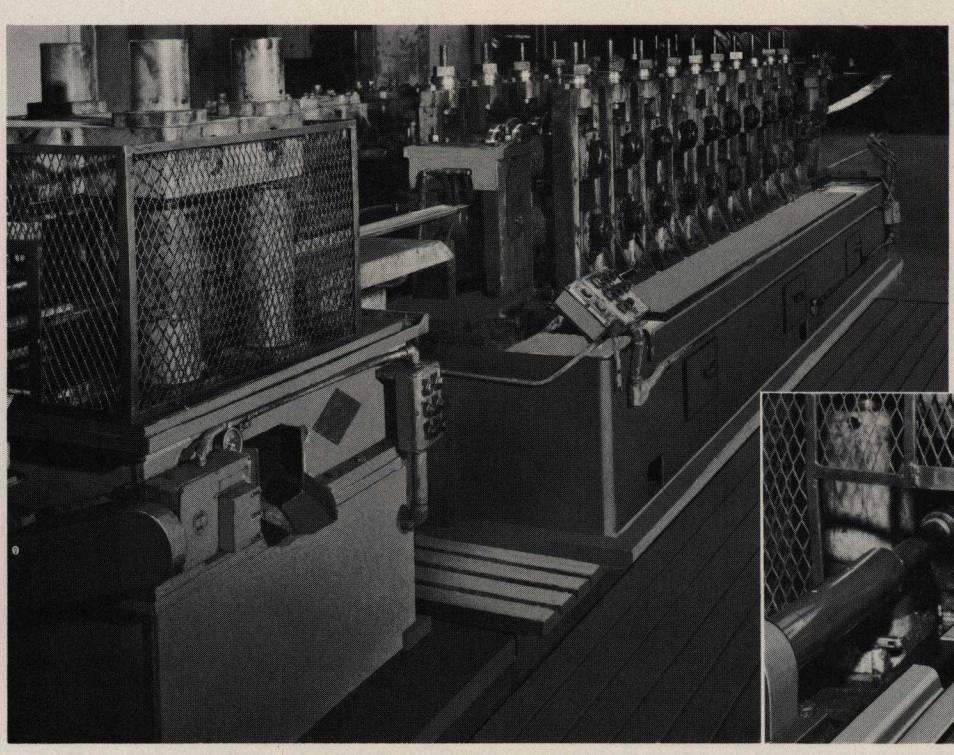
Truscon J-Series "O-T" Open Truss Steel Joists are fundamentally a Warren-type truss having top and bottom chords of cold-roll formed members and a plain round continuous web. Major joist components are assembled by means of electronically controlled resistance welding methods under pressure, making positive connections at all joints.

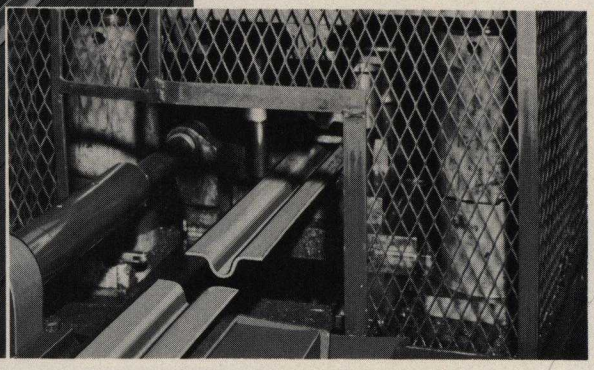
While Open Truss Steel Joist were primarily designed to provide a more rigid, fire resistant, economical and light weight floor construction, their use through the past years has proved their dependability in every type of construction. In use, Truscon "O-T" Open Truss Steel Joists are very simple to install, being completely shop fabricated and reaching the job ready for placing. Each joist is marked to correspond with the erection diagram, simplifying and speeding construction work.

Truscon J-Series "O-T" Open Truss Steel Joists conform in all respects to The Steel Joist Institute Standard Specifications for J-Series Open Web Steel Joists. In addition, Truscon's rigid quality control, inspection and consistent fabricating procedures offer quality and workmanship unexcelled in the industry.

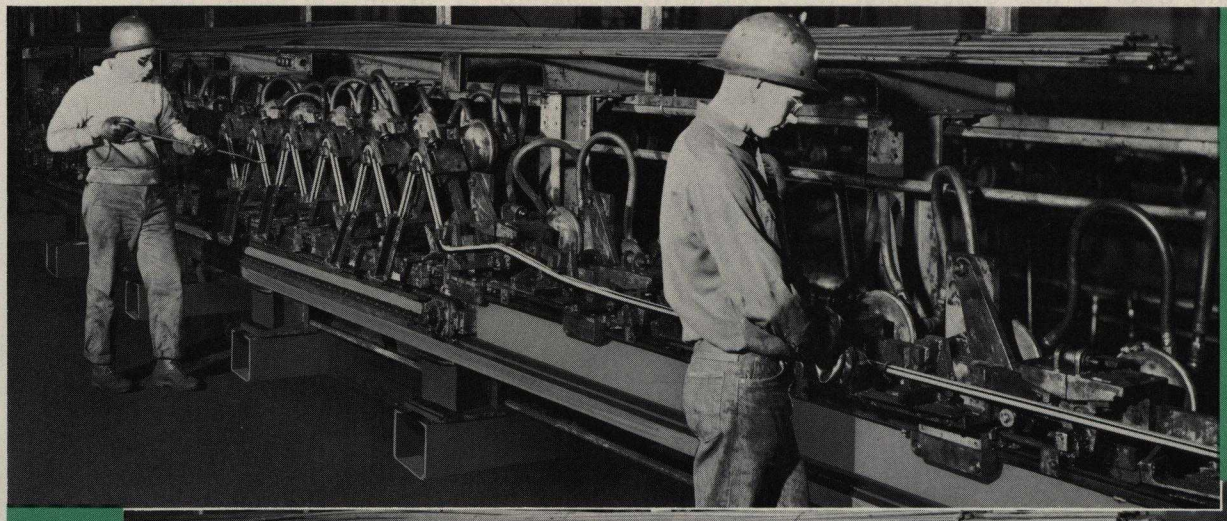
Operating under the vast sales coverage offered by Republic Steel Corporation, Truscon has direct sales representatives in all parts of the country and through coordination between offices can offer direct contact between architects and engineers in one locale and the job in another. Engineering trained sales personnel in all offices can offer you design and layout assistance to enable you to enjoy the full economies offered by Truscon "O-T" Open Truss Steel Joists.

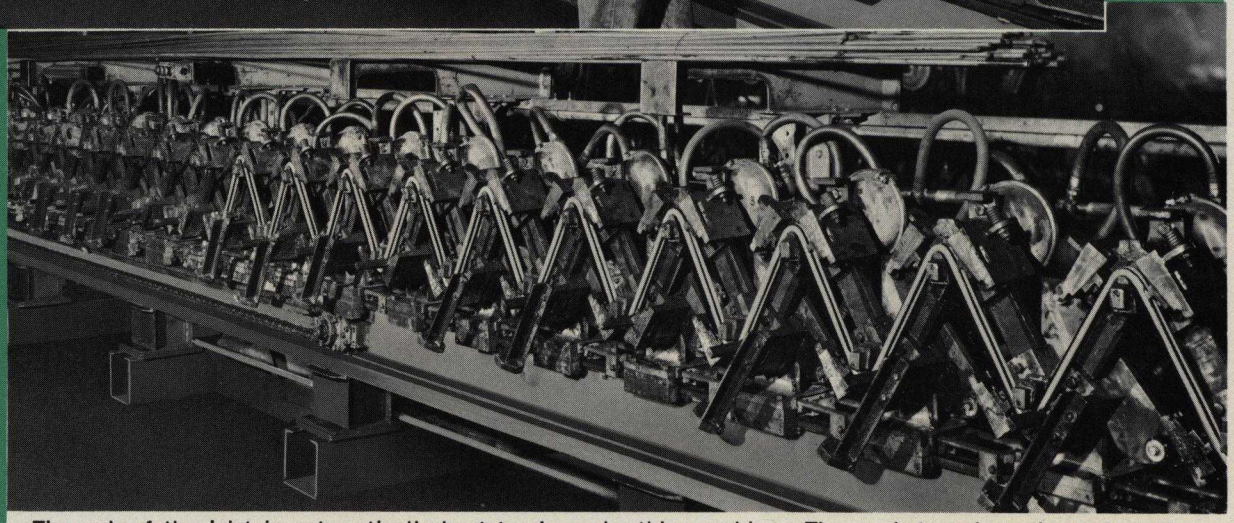
MODERN FABRICATING FACILITIES INSURE





Strip steel is fed into one end of the roll-form machine and emerges as a joist chord formation. The chord is automatically cut to length at the shear and is carried along to a run out table.

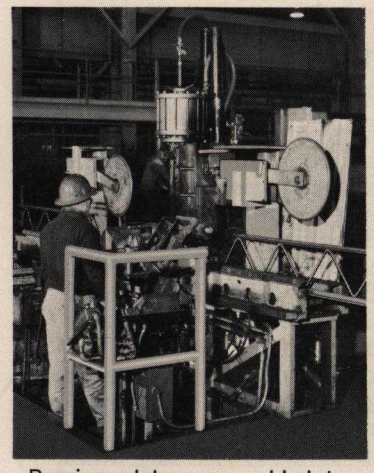




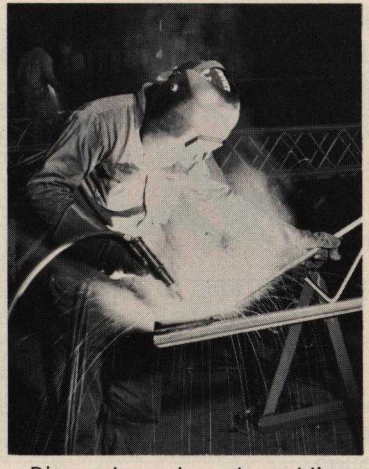
The web of the joist is automatically bent to shape in this machine. These photos show the web half formed and then in its final form. Bends are made individually.

CAREFUL QUALITY CONTROL AT TRUSCON

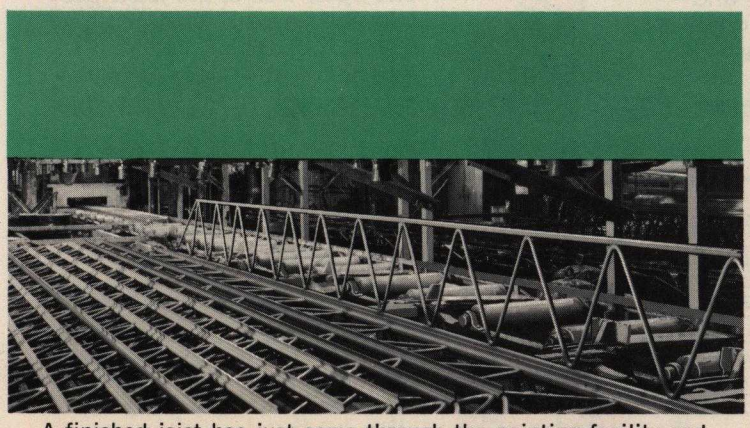
Chords and web are welded together to form a joist. Three welds are made simultaneously in this mammoth welder. Joists then move onto a conveyor for transfer to the next station.



Bearing plates are welded to the joist at this station along the conveyor system. Here again, for consistent accuracy and strength, the operation is automatic.



Diagonal end rod welding completes the final joist assembly. At Truscon, this arc welding insures a strong, complete welding job.



A finished joist has just come through the painting facility and is being transferred to the finish table. Every nook and cranny has been thoroughly coated with a protective finish.

Truscon joists are loaded onto trucks in covered bays as another step in quality control. This versatile overhead crane loads automatically.

HERE ARE THE ADVANTAGES OF

TRUSCON "O-T" OPEN TRUSS STEEL JOISTS

(J - SERIES)

CONSTRUCTION

FIRE RESISTANT

Fire tests prove that ¾" of cement or gypsum ceiling plaster protects Truscon "O-T" Open Truss Steel Joist Construction against high temperatures. The majority of insurance rating bureaus have recognized the merits of this construction and have accordingly given it a first class fire resistant classification.

Open Truss Steel Joist Construction is built entirely of incombustible materials. The reinforced concrete slab and metal lath and plaster ceiling are fire resistant materials and have proved their worth under the most severe conditions.

In every instance of actual fires occurring in buildings, Steel Joist Construction has amply justified every claim for its fire resistance. It has not only withstood the heat, but prevented the spread of fire to other parts of the building.

VERMIN RESISTANT

All members of the Truscon "O-T" Open Truss Steel Joist are steel and impregnable to the attacks of insects.

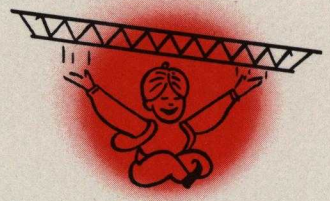
ECONOMICAL

The economy of this construction is made possible through efficient production and the savings that its light weight effects throughout the building in the supporting framework and foundations. Its speedy erection protects the original investment and minimizes the overhead expense. In the completed building, the permanence of Truscon "O-T" Open Truss Steel Joist Construction lowers insurance costs and maintenance expense.

ALL WEATHER BUILDING

Construction is carried on as readily in winter as in summer. Unlike many other systems of fire resistant construction, Truscon "O-T" Open Truss Steel Joist Construction is not wholly dependent upon the setting of cement, which is seriously retarded by cold weather.

LIGHT WEIGHT—Easily Installed



Other features of Open Truss Steel Joist Construction that recommends its use in many buildings are light weight and speed of erection. The complete shop fabrication, the absence of form work and the minimum of field work—all contribute to make steel joists the most rapidly erected fire resistant construction. Being self-sustaining, any number of floors can be constructed at one time. The joists can be used as a working platform to carry on other building operations.

SOUND RESISTANT

The only practical test of the soundproofness of any type of construction is in the completed construction itself. The different densities of the materials comprising the construction, together with the dead air space, tend to destroy sound waves originating either below or above the construction. The greatly increased use of Truscon "O-T" Open Truss Steel Joist Construction in larger and more expensive types of buildings, and its acceptance by Architects and Engineers in all parts of the country prove that this construction fully meets the essentials of soundproofness.

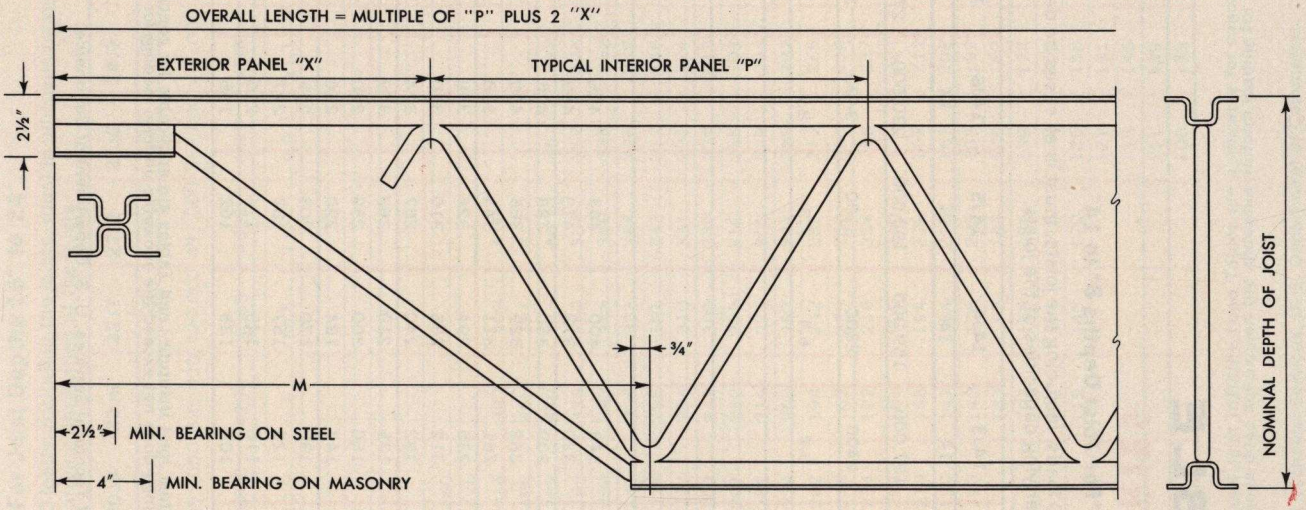
PIPES AND CONDUIT—Easily Installed

The open web of the joists permits the passage of pipes and electric conduits, within the depths of the floor, thereby making such installations very economical.

RADIANT HEATING

The open web of these joists will permit unobstructed flow of air current in any direction, and this feature is of important consideration when planning a radiant heating system.

J-SERIES DIMENSIONS AND PROPERTIES



Joist Type	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4
Nominal Depth	8	10	10	10	12	12	12	12	12	14	14
I of Joist In.⁴	10.145	16.347	20.536	25.951	24.327	29.982	38.370	45.026	54.835	41.785	53.158
Interior Panel "P" In.	12	12	12	12	12	12	12	12	12	18	18
"X" (Min.) In.	10	10	10	10	10	10	10	10	10	14½	14½
"X" (Max.) and "M" (Min.) In.	16	16	16	16	16	16	16	16	16	23½	23½
"M" (Max.) In.	22	22	22	22	22	22	22	22	22	32½	32½

Joist Type	14J5	14J6	14J7	16J4	16J5	16J6	16J7	16J8	18J5	18J6	18J7
Nominal Depth	14	14	14	16	16	16	16	16	18	18	18
I of Joist In.⁴	62.930	76.585	92.025	67.808	81.970	99.900	120.416	141.153	108.343	131.746	158.084
Interior Panel "P" In.	18	18	18	18	18	18	18	18	24	24	24
"X" (Min.) In.	14½	14½	14½	14½	14½	14½	14½	14½	19	19	19
"X" (Max.) and "M" (Min.) In.	23½	23½	23½	23½	23½	23½	23½	23½	31	31	31
"M" (Max.) In.	32½	32½	32½	32½	32½	32½	32½	32½	43	43	43

Joist Type	18J8	20J5	20J6	20J7	20J8	22J6	22J7	22J8	24J6	24J7	24J8
Nominal Depth	18	20	20	20	20	22	22	22	24	24	24
I of Joist In.⁴	181.751	130.760	154.839	190.002	226.149	182.255	231.471	271.285	218.337	277.037	327.381
Interior Panel "P" In.	24	24	24	24	24	24	24	24	24	24	24
"X" (Min.) In.	19	19	19	19	19	19	19	19	19	19	19
"X" (Max.) and "M" (Min.) In.	31	31	31	31	31	31	31	31	31	31	31
"M" (Max.) In.	43	43	43	43	43	43	43	43	43	43	43

STANDARD LOAD TABLE

OPEN WEB STEEL JOISTS, J-SERIES

Allowable Total Safe Loads in Pounds Per Linear Foot of J-SERIES Steel Joists — *For Joist Depths 8″ to 14″.

The following table gives the TOTAL safe uniformly-distributed load-carrying capacities, in pounds per linear foot, of J-Series Open Web Steel Joists adopted by the Steel Joist Institute. The weight of DEAD loads, including the joists, must in all cases be deducted to determine the LIVE load-carrying capacities of the joists.

Joist Designation	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4	14J5	14J6	14J7
*Depth in Inches	8	10	10	10	12	12	12	12	12	14	14	14	14	14
Resisting Moment In Inch Pounds	56,000	70,000	89,000	111,000	85,000	108,000	135,000	161,000	196,000	127,000	159,000	190,000	230,000	276,000
Max. End Reaction In Pounds	1900	2000	2200	2400	2200	2300	2500	2700	3000	2400	2800	3100	3400	3700
†Approx. Joist Wgt. Pounds Per Foot	4.2	4.2	4.8	6.0	4.5	5.1	6.0	7.0	8.1	5.2	6.4	7.3	8.4	9.7
Span In Feet														
8	475													
9	422													
10	373	400	440	480										
11	309	364	400	436										
12	259	324	367	400	367	383	417	450	500					
13	221	276	338	369	335	354	385	415	462					
14	190	238	303	343	289	329	357	386	429	343	400	443	486	529
15	166	207	264	320	252	307	333	360	400	320	373	413	453	493
16	146	182	232	289	221	281	313	338	375	300	350	388	425	463
17		161	205	256	196	249	294	318	353	282	329	365	400	435
18		144	183	228	175	222	278	300	333	261	311	344	378	411
19		129	164	205	157	199	249	284	316	235	294	326	358	389
20		117	148	185	142	180	225	268	300	212	265	310	340	370
21					128	163	204	243	286	192	240	287	324	352
22					117	149	186	222	270	175	219	262	309	336
23					107	136	170	203	247	160	200	239	290	322
24					98	125	156	186	227	147	184	220	266	308
25										135	170	203	245	294
26										125	157	187	227	272
27										116	145	174	210	252
28										108	135	162	196	235

*Indicates Nominal Depth of Steel Joists only.
†Approximate Weights per Linear Foot of Steel Joists only.

LOADS ABOVE COLORED LINES ARE GOVERNED BY SHEAR.

Tests on steel joists designed in accordance with the Steel Joist Institute Standard Specifications have demonstrated that the Steel Joist Institute Load Tables are applicable for concentrated top chord loadings (such as are developed in bulb-tee roof construction) when the sum of the equal concentrated top chord loadings does not exceed the allowable uniform loading for the joist type and span and the loads are placed at spacings not exceeding 33″ along the top chord.

Adopted by the Steel Joist Institute May 30, 1961.

This Table in accordance with Simplified Practice Recommendation filed with the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce.

Allowable Total Safe Loads in Pounds Per Linear Foot of J-SERIES Steel Joists — *For Joist Depths 16″ to 24″.

The following table gives the TOTAL safe uniformly-distributed load-carrying capacities, in pounds per linear foot, of J-Series Open Web Steel Joists adopted by the Steel Joist Institute. The weight of DEAD loads, including the joists, must in all cases be deducted to determine the LIVE load-carrying capacities of the joists.

Joist Designation	16J4	16J5	16J6	16J7	16J8	18J5	18J6	18J7	18J8	20J5	20J6	20J7	20J8	22J6	22J7	22J8	24J6	24J7	24J8
*Depth In Inches	16	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	24	24	24
Resisting Moment In Inch Pounds	173,000	216,000	258,000	310,000	359,000	243,000	293,000	352,000	406,000	265,000	316,000	382,000	455,000	335,000	420,000	493,000	367,000	460,000	540,000
Max. End Reaction In Pounds	3000	3300	3600	4000	4300	3500	3900	4200	4500	3800	4100	4300	4600	4200	4500	4800	4400	4700	5000
†Approx. Joist Wgt. Pounds Per Foot	6.6	7.6	8.5	10.1	11.3	7.9	9.0	10.2	11.3	8.1	9.2	10.6	11.9	9.6	10.5	11.9	9.9	11.1	12.4
Span In Feet																			
16	375	413	450	500	538														
17	353	388	424	471	506														
18	333	367	400	444	478	389	433	467	500										
19	316	347	379	421	453	368	411	442	474										
20	288	330	360	400	430	350	390	420	450	380	410	430	460						
21	262	314	343	381	410	333	371	400	429	362	390	410	438						
22	238	298	327	364	391	318	355	382	409	345	373	391	418	382	409	436			
23	218	272	313	348	374	304	339	365	391	330	357	374	400	365	391	417			
24	200	250	299	333	358	281	325	350	375	307	342	358	383	350	375	400	367	392	417
25	185	230	275	320	344	259	312	336	360	283	328	344	368	336	360	384	352	376	400
26	171	213	254	306	331	240	289	323	346	261	312	331	354	323	346	369	338	362	385
27	158	198	236	283	319	222	268	311	333	242	289	319	341	306	333	356	326	348	370
28	147	184	219	264	305	207	249	299	321	225	269	307	329	285	321	343	312	336	357
29	137	171	205	246	285	193	232	279	310	210	250	297	317	266	310	331	291	324	345
30	128	160	191	230	266	180	217	261	300	196	234	283	307	248	300	320	272	313	333
31	120	150	179	215	249	169	203	244	282	184	219	265	297	232	290	310	255	303	323
32	113	141	168	202	234	158	191	229	264	173	206	249	288	218	273	300	239	294	313
33						149	179	215	249	162	193	234	279	205	257	291	225	282	303
34						140	169	203	234	153	182	220	262	193	242	282	212	265	294
35						132	159	192	221	144	172	208	248	182	229	268	200	250	286
36						125	151	181	209	136	163	197	234	172	216	254	189	237	278
37										129	154	186	222	163	205	240	179	224	263
38										122	146	176	210	155	194	228	169	212	249
39										116	139	167	199	147	184	216	161	202	237
40										110	132	159	190	140	175	205	153	192	225
41														133	167	196	146	182	214
42														127	159	186	139	174	204
43														121	151	178	132	166	195
44														115	145	170	126	158	186
45																	121	151	178
46																	116	145	170
47																	111	139	163
48																	106	133	156

*Indicates Nominal Depth of Steel Joists only.
†Approximate Weights per Linear Foot of Steel Joists only.

LOADS ABOVE COLORED LINES ARE GOVERNED BY SHEAR.

Tests on steel joists designed in accordance with the Steel Joist Institute Standard Specifications have demonstrated that the Steel Joist Institute Load Tables are applicable for concentrated top chord loadings (such as are developed in bulb-tee roof construction) when the sum of the equal concentrated top chord loadings does not exceed the allowable uniform loading for the joist type and span and the loads are placed at spacings not exceeding 33″ along the top chord.

Adopted by the Steel Joist Institute May 30, 1961.

This Table in accordance with Simplified Practice Recommendation filed with the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce.

LOAD AND SPACING TABLE

OPEN WEB STEEL JOISTS, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			* 12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
8 J 2	8'-0"	3800	475	407	356	335	317	300	285	271	259	248	238	190	158	136	119	95	79	68	8 J 2
8 J 2	9'-0"	3800	422	362	317	298	281	267	253	241	230	220	211	169	141	121	106	84	70	60	8 J 2
8 J 2	10'-0"	3730	373	320	280	264	249	236	224	213	204	195	187	149	124	107	93	75	62	53	8 J 2
10 J 2		4000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	10 J 2
10 J 3		4400	440	377	330	311	293	278	264	251	240	230	220	176	147	126	110	88	73	63	10 J 3
10 J 4		4800	480	411	360	339	320	303	288	274	262	250	240	192	160	137	120	96	80	69	10 J 4
8 J 2	11'-0"	3390	309	264	231	218	206	195	185	176	168	161	154	123	103	88	77	62	51	44	8 J 2
10 J 2		4000	364	312	273	257	242	230	218	208	198	190	182	145	121	104	91	73	61	52	10 J 2
10 J 3		4400	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	10 J 3
10 J 4		4800	436	374	327	308	291	276	262	249	238	228	218	175	145	125	109	87	73	62	10 J 4
8 J 2	12'-0"	3110	259	222	194	183	173	164	156	148	141	135	130	104	86	74	65	52	43	37	8 J 2
10 J 2		3890	324	278	243	229	216	205	194	185	177	169	162	130	108	93	81	65	54	46	10 J 2
10 J 3		4400	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52	10 J 3
10 J 4		4800	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	10 J 4
12 J 2		4400	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52	12 J 2
12 J 3		4600	383	329	288	271	256	242	230	219	209	200	192	153	128	110	96	77	64	55	12 J 3
12 J 4		5000	417	357	313	294	278	263	250	238	227	217	208	167	139	119	104	83	69	60	12 J 4
12 J 5		5400	450	386	338	318	300	284	270	257	245	235	225	180	150	129	113	90	75	64	12 J 5
12 J 6		6000	500	429	375	353	333	316	300	286	273	261	250	200	167	143	125	100	83	71	12 J 6
8 J 2	13'-0"	2870	221	189	166	156	147	140	133	126	120	115	110	88	74	63	55	44	37	32	8 J 2
10 J 2		3590	276	237	207	195	184	174	166	158	151	144	138	110	92	79	69	55	46	39	10 J 2
10 J 3		4400	338	290	254	239	226	214	203	193	185	177	169	135	113	97	85	68	56	48	10 J 3
10 J 4		4800	369	316	277	261	246	233	222	211	201	193	185	148	123	105	92	74	62	53	10 J 4
12 J 2		4360	335	287	251	237	224	212	201	192	183	175	168	134	112	96	84	67	56	48	12 J 2
12 J 3		4600	354	303	265	250	236	223	212	202	193	185	177	142	118	101	88	71	59	51	12 J 3
12 J 4		5000	385	330	288	271	256	243	231	220	210	201	192	154	128	110	96	77	64	55	12 J 4
12 J 5		5400	415	356	312	293	277	262	249	237	227	217	208	166	138	119	104	83	69	59	12 J 5
12 J 6		6000	462	396	346	326	308	292	277	264	252	241	231	185	154	132	115	92	77	66	12 J 6
8 J 2	14'-0"	2670	190	163	143	134	127	120	114	109	104	99	95	76	63	54	48	38	32	—	8 J 2
10 J 2		3330	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	34	10 J 2
10 J 3		4240	303	259	227	214	202	191	182	173	165	158	151	121	101	86	76	61	50	43	10 J 3
10 J 4		4800	343	294	257	242	229	217	206	196	187	179	171	137	114	98	86	69	57	49	10 J 4
12 J 2		4050	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	12 J 2
12 J 3		4600	329	282	246	232	219	208	197	188	179	171	164	131	110	94	82	66	55	47	12 J 3
12 J 4		5000	357	306	268	252	238	226	214	204	195	186	179	143	119	102	89	71	60	51	12 J 4
12 J 5		5400	386	331	289	272	257	244	231	220	210	201	193	154	129	110	96	77	64	55	12 J 5
12 J 6		6000	429	367	321	303	286	271	257	245	234	224	214	171	143	122	107	86	71	61	12 J 6
14 J 3		4800	343	294	257	242	229	217	206	196	187	179	171	137	114	98	86	69	57	49	14 J 3
14 J 4		5600	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	14 J 4
14 J 5		6200	443	380	332	313	295	280	266	253	242	231	221	177	148	127	111	89	74	63	14 J 5
14 J 6		6800	486	416	364	343	324	307	291	278	265	253	243	194	162	139	121	97	81	69	14 J 6
14 J 7		7400	529	453	396	373	352	334	317	302	288	276	264	211	176	151	132	106	88	76	14 J 7
8 J 2	15'-0"	2490	166	142	124	117	111	105	100	95	91	87	83	66	55	47	41	33	—	—	8 J 2
10 J 2		3110	207	178	156	146	138	131	124	119	113	108	104	83	69	59	52	41	35	30	10 J 2
10 J 3		3960	264	226	198	186	176	167	158	151	144	138	132	105	88	75	66	53	44	38	10 J 3
10 J 4		4800	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	10 J 4
12 J 2		3780	252	216	189	178	168	159	151	144	137	131	126	101	84	72	63	50	42	36	12 J 2
12 J 3		4600	307	263	230	216	204	194	184	175	167	160	153	123	102	88	77	61	51	44	12 J 3
12 J 4		5000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	12 J 4
12 J 5		5400	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	12 J 5
12 J 6		6000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	12 J 6
14 J 3		4800	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	14 J 3
14 J 4		5600	373	320	280	264	249	236	224	213	204	195	187	149	124	107	93	75	62	53	14 J 4
14 J 5		6200	413	354	310	292	276	261	248	236	225	216	207	165	138	118	103	83	69	59	14 J 5

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
14 J 6	15'-0"	6800	453	389	340	320	302	286	272	259	247	237	227	181	151	130	113	91	76	65	14 J 6
14 J 7		7400	493	423	370	348	329	312	296	282	269	257	247	197	164	141	123	99	82	70	14 J 7
8 J 2	16'-0"	2330	146	125	109	103	97	92	87	83	80	76	73	58	49	42	36	—	—	—	8 J 2
10 J 2		2920	182	156	137	129	122	115	109	104	99	95	91	73	61	52	46	36	30	—	10 J 2
10 J 3		3710	232	199	174	164	155	146	139	132	126	121	116	93	77	66	58	46	39	33	10 J 3
10 J 4		4630	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	10 J 4
12 J 2		3540	221	190	166	156	148	140	133	126	121	115	111	89	74	63	55	44	37	32	12 J 2
12 J 3		4500	281	241	211	199	188	178	169	161	153	147	141	113	94	80	70	56	47	40	12 J 3
12 J 4		5000	313	268	234	221	208	197	187	179	170	163	156	125	104	89	78	63	52	45	12 J 4
12 J 5		5400	338	289	253	238	225	213	202	193	184	176	169	135	113	96	84	68	56	48	12 J 5
12 J 6		6000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	63	54	12 J 6
14 J 3		4800	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	14 J 3
14 J 4		5600	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	14 J 4
14 J 5		6200	388	332	291	274	258	245	232	221	211	202	194	155	129	111	97	78	65	55	14 J 5
14 J 6		6800	425	364	319	300	283	268	255	243	232	222	213	170	142	121	106	85	71	61	14 J 6
14 J 7		7400	463	396	347	326	308	292	277	264	252	241	231	185	154	132	116	93	77	66	14 J 7
16 J 4		6000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	63	54	16 J 4
16 J 5		6600	413	354	309	291	275	261	247	236	225	215	206	165	138	118	103	83	69	59	16 J 5
16 J 6		7200	450	386	338	318	300	284	270	257	245	235	225	180	150	129	113	90	75	64	16 J 6
16 J 7		8000	500	429	375	353	333	316	300	286	273	261	250	200	167	143	125	100	83	71	16 J 7
16 J 8		8600	538	461	403	379	358	339	322	307	293	280	269	215	179	154	134	108	90	77	16 J 8
10 J 2	17'-0"	2750	161	138	121	114	108	102	97	92	88	84	81	65	54	46	40	32	—	—	10 J 2
10 J 3		3490	205	176	154	145	137	130	123	117	112	107	103	82	68	59	51	41	34	—	10 J 3
10 J 4		4350	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	10 J 4
12 J 2		3330	196	168	147	138	131	124	118	112	107	102	98	78	65	56	49	39	33	—	12 J 2
12 J 3		4240	249	214	187	176	166	157	149	142	136	130	125	100	83	71	62	50	42	36	12 J 3
12 J 4		5000	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	12 J 4
12 J 5		5400	318	272	238	224	212	201	191	182	173	166	159	127	106	91	79	64	53	45	12 J 5
12 J 6		6000	353	303	265	249	235	223	212	202	193	184	176	141	118	101	88	71	59	50	12 J 6
14 J 3		4800	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	14 J 3
14 J 4		5600	329	282	247	233	220	208	198	188	180	172	165	132	110	94	82	66	55	47	14 J 4
14 J 5		6200	365	313	274	257	243	230	219	208	199	190	182	146	122	104	91	73	61	52	14 J 5
14 J 6		6800	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	14 J 6
14 J 7		7400	435	373	326	307	290	275	261	249	237	227	218	174	145	124	109	87	73	62	14 J 7
16 J 4		6000	353	303	265	249	235	223	212	202	193	184	176	141	118	101	88	71	59	50	16 J 4
16 J 5		6600	388	333	291	274	259	245	233	222	212	203	194	155	129	111	97	78	65	55	16 J 5
16 J 6		7200	424	363	318	299	282	267	254	242	231	221	212	169	141	121	106	85	71	61	16 J 6
16 J 7		8000	471	403	353	332	314	297	282	269	257	246	235	188	157	134	118	94	78	67	16 J 7
16 J 8		8600	506	434	379	357	337	320	304	289	276	264	253	202	169	145	126	101	84	72	16 J 8
10 J 2	18'-0"	2590	144	123	108	102	96	91	86	82	79	75	72	58	48	41	36	—	—	—	10 J 2
10 J 3		3300	183	157	137	129	122	116	110	105	100	96	92	73	61	52	46	37	31	—	10 J 3
10 J 4		4110	228	196	171	161	152	144	137	131	125	119	114	91	76	65	57	46	38	33	10 J 4
12 J 2		3150	175	150	131	123	117	110	105	100	95	91	87	70	58	50	44	35	—	—	12 J 2
12 J 3		4000	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	12 J 3
12 J 4		5000	278	238	208	196	185	175	167	159	152	145	139	111	93	79	69	56	46	40	12 J 4
12 J 5		5400	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	12 J 5
12 J 6		6000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	12 J 6
14 J 3		4700	261	224	196	184	174	165	157	149	143	136	131	105	87	75	65	52	44	37	14 J 3
14 J 4		5600	311	267	233	220	207	196	187	178	170	162	156	124	104	89	78	62	52	44	14 J 4
14 J 5		6200	344	295	258	243	230	218	207	197	188	180	172	138	115	98	86	69	57	49	14 J 5
14 J 6		6800	378	324	283	267	252	239	227	216	206	197	189	151	126	108	94	76	63	54	14 J 6
14 J 7		7400	411	352	308	290	274	260	247	235	224	214	206	164	137	117	103	82	69	59	14 J 7
16 J 4		6000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	16 J 4
16 J 5		6600	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52	16 J 5
16 J 6		7200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	16 J 6
16 J 7		8000	444	381	333	314	296	281	267	254	242	232	222	178	148	127	111	89	74	63	16 J 7
16 J 8		8600	478	410	358	337	319	302	287	273	261	249	239	191	159	137	119	96	80	68	16 J 8
18 J 5		7000	389	333	292	275	259	246	233	222	212	203	194	156	130	111	97	78	65	56	18 J 5
18 J 6		7800	433	371	325	306	289	274	260	248	236	226	217	173	144	124	108	87	72	62	18 J 6
18 J 7		8400	467	400	350	329	311	295	280	267	255	243	233	187	156	133	117	93	78	67	18 J 7
18 J 8		9000	500	429	375	353	333	316	300	286	273	261	250	200	167	143	125	100	83	71	18 J 8

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			* 12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
10 J 2	19'-0"	2460	129	111	97	91	86	82	78	74	71	67	65	52	43	37	32	—	—	—	10 J 2
10 J 3		3120	164	141	123	116	110	104	99	94	90	86	82	66	55	47	41	33	—	—	10 J 3
10 J 4		3890	205	176	154	145	137	129	123	117	112	107	102	82	68	59	51	41	34	—	10 J 4
12 J 2		2980	157	135	118	111	105	99	94	90	86	82	78	63	52	45	39	31	—	—	12 J 2
12 J 3		3790	199	171	150	141	133	126	120	114	109	104	100	80	66	57	50	40	33	—	12 J 3
12 J 4		4740	249	214	187	176	166	157	150	142	136	130	125	100	83	71	62	50	42	36	12 J 4
12 J 5		5400	284	244	213	201	189	180	171	162	155	148	142	114	95	81	71	57	47	41	12 J 5
12 J 6		6000	316	271	237	223	211	199	189	180	172	165	158	126	105	90	79	63	53	45	12 J 6
14 J 3		4460	235	201	176	166	156	148	141	134	128	122	117	94	78	67	59	47	39	34	14 J 3
14 J 4		5580	294	252	220	207	196	185	176	168	160	153	147	117	98	84	73	59	49	42	14 J 4
14 J 5		6200	326	280	245	230	218	206	196	186	178	170	163	131	109	93	82	65	54	47	14 J 5
14 J 6		6800	358	307	268	253	239	226	215	205	195	187	179	143	119	102	89	72	60	51	14 J 6
14 J 7		7400	389	334	292	275	260	246	234	223	212	203	195	156	130	111	97	78	65	56	14 J 7
16 J 4		6000	316	271	237	223	211	199	189	180	172	165	158	126	105	90	79	63	53	45	16 J 4
16 J 5		6600	347	298	261	245	232	219	208	198	189	181	174	139	116	99	87	69	58	50	16 J 5
16 J 6		7200	379	325	284	267	253	239	227	217	207	198	189	152	126	108	95	76	63	54	16 J 6
16 J 7		8000	421	361	316	297	281	266	253	241	230	220	211	168	140	120	105	84	70	60	16 J 7
16 J 8		8600	453	388	339	319	302	286	272	259	247	236	226	181	151	129	113	91	75	65	16 J 8
18 J 5		7000	368	316	276	260	246	233	221	211	201	192	184	147	123	105	92	74	61	53	18 J 5
18 J 6		7800	411	352	308	290	274	259	246	235	224	214	205	164	137	117	103	82	68	59	18 J 6
18 J 7		8400	442	379	332	312	295	279	265	253	241	231	221	177	147	126	111	88	74	63	18 J 7
18 J 8		9000	474	406	355	334	316	299	284	271	258	247	237	189	158	135	118	95	79	68	18 J 8
10 J 2	20'-0"	2330	117	100	88	82	78	74	70	67	64	61	58	47	39	33	—	—	—	—	10 J 2
10 J 3		2970	148	127	111	105	99	94	89	85	81	77	74	59	49	42	37	30	—	—	10 J 3
10 J 4		3700	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	10 J 4
12 J 2		2830	142	121	106	100	94	89	85	81	77	74	71	57	47	40	35	—	—	—	12 J 2
12 J 3		3600	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	12 J 3
12 J 4		4500	225	193	169	159	150	142	135	129	123	117	113	90	75	64	56	45	38	32	12 J 4
12 J 5		5370	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	12 J 5
12 J 6		6000	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	12 J 6
14 J 3		4230	212	181	159	149	141	134	127	121	115	110	106	85	71	60	53	42	35	30	14 J 3
14 J 4		5300	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	14 J 4
14 J 5		6200	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	14 J 5
14 J 6		6800	340	291	255	240	227	215	204	194	185	177	170	136	113	97	85	68	57	49	14 J 6
14 J 7		7400	370	317	278	261	247	234	222	211	202	193	185	148	123	106	93	74	62	53	14 J 7
16 J 4		5770	288	247	216	204	192	182	173	165	157	150	144	115	96	82	72	58	48	41	16 J 4
16 J 5		6600	330	283	248	233	220	208	198	189	180	172	165	132	110	94	83	66	55	47	16 J 5
16 J 6		7200	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	16 J 6
16 J 7		8000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	16 J 7
16 J 8		8600	430	369	323	304	287	272	258	246	235	224	215	172	143	123	108	86	72	61	16 J 8
18 J 5		7000	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	18 J 5
18 J 6		7800	390	334	293	275	260	246	234	223	213	203	195	156	130	111	98	78	65	56	18 J 6
18 J 7		8400	420	360	315	296	280	265	252	240	229	219	210	168	140	120	105	84	70	60	18 J 7
18 J 8		9000	450	386	338	318	300	284	270	257	245	235	225	180	150	129	113	90	75	64	18 J 8
20 J 5		7600	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54	20 J 5
20 J 6		8200	410	351	308	289	273	259	246	234	224	214	205	164	137	117	103	82	68	59	20 J 6
20 J 7		8600	430	369	323	304	287	272	258	246	235	224	215	172	143	123	108	86	72	61	20 J 7
20 J 8		9200	460	394	345	325	307	291	276	263	251	240	230	184	153	131	115	92	77	66	20 J 8
12 J 2	21'-0"	2700	128	110	96	91	86	81	77	73	70	67	64	51	43	37	32	—	—	—	12 J 2
12 J 3		3430	163	140	122	115	109	103	98	93	89	85	82	65	54	47	41	33	—	—	12 J 3
12 J 4		4290	204	175	153	144	136	129	122	117	111	106	102	82	68	58	51	41	34	—	12 J 4
12 J 5		5110	243	209	183	172	162	154	146	139	133	127	122	97	81	70	61	49	41	35	12 J 5
12 J 6		6000	286	245	214	202	190	180	171	163	156	149	143	114	95	82	71	57	48	41	21 J 6
14 J 3		4030	192	165	144	136	128	121	115	110	105	100	96	77	64	55	48	38	32	—	14 J 3
14 J 4		5050	240	206	180	170	160	152	144	137	131	125	120	96	80	69	60	48	40	34	14 J 4
14 J 5		6030	287	246	215	203	191	181	172	164	157	150	144	115	96	82	72	57	48	41	14 J 5
14 J 6		6800	324	278	243	229	216	205	194	185	177	169	162	130	108	93	81	65	54	46	14 J 6
14 J 7		7400	352	302	264	249	235	223	211	201	192	184	176	141	117	101	88	70	59	50	14 J 7
16 J 4		5490	262	224	196	185	174	165	157	149	143	136	131	105	87	75	65	52	44	37	16 J 4
16 J 5		6600	314	269	236	222	210	199	189	180	171	164	157	126	105	90	79	63	52	45	16 J 5
16 J 6		7200	343	294	257	242	229	217	206	196	187	179	171	137	114	98	86	69	57	49	16 J 6
16 J 7		8000	381	327	286	269	254	241	229	218	208	199	190	152	127	109	95	76	63	54	16 J 7
16 J 8		8600	410	351	307	289	273	259	246	234	223	214	205	164	137	117	102	82	68	59	16 J 8

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
18 J 5	21'-0"	7000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	18 J 5
18 J 6		7800	371	318	279	262	248	235	223	212	203	194	186	149	124	106	93	74	62	53	18 J 6
18 J 7		8400	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	18 J 7
18 J 8		9000	429	367	321	303	286	271	257	245	234	224	214	171	143	122	107	86	71	61	18 J 8
20 J 5		7600	362	310	271	255	241	229	217	207	197	189	181	145	121	103	90	72	60	52	20 J 5
20 J 6		8200	390	335	293	276	260	247	234	223	213	204	195	156	130	112	98	78	65	56	20 J 6
20 J 7		8600	410	351	307	289	273	259	246	234	223	214	205	164	137	117	102	82	68	59	20 J 7
20 J 8		9200	438	375	329	309	292	277	263	250	239	229	219	175	146	125	110	88	73	63	20 J 8
12 J 2	22'-0"	2580	117	100	88	83	78	74	70	67	64	61	59	47	39	33	—	—	—	—	12 J 2
12 J 3		3270	149	128	112	105	99	94	89	85	81	78	74	60	50	43	37	30	—	—	12 J 3
12 J 4		4090	186	159	139	131	124	117	112	106	101	97	93	74	62	53	46	37	31	—	12 J 4
12 J 5		4880	222	190	166	157	148	140	133	127	121	116	111	89	74	63	55	44	37	32	12 J 5
12 J 6		5940	270	231	202	191	180	171	162	154	147	141	135	108	90	77	67	54	45	39	12 J 6
14 J 3		3850	175	150	131	123	117	110	105	100	95	91	87	70	58	50	44	35	—	—	14 J 3
14 J 4		4820	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	37	31	14 J 4
14 J 5		5760	262	224	196	185	174	165	157	150	143	137	131	105	87	75	65	52	44	37	14 J 5
14 J 6		6800	309	265	232	218	206	195	185	177	169	161	155	124	103	88	77	62	52	44	14 J 6
14 J 7		7400	336	288	252	237	224	212	202	192	183	175	168	135	112	96	84	67	56	48	14 J 7
16 J 4		5240	238	204	179	168	159	151	143	136	130	124	119	95	79	68	60	48	40	34	16 J 4
16 J 5		6550	298	255	223	210	198	188	179	170	162	155	149	119	99	85	74	60	50	43	16 J 5
16 J 6		7200	327	281	245	231	218	207	196	187	179	171	164	131	109	94	82	65	55	47	16 J 6
16 J 7		8000	364	312	273	257	242	230	218	208	198	190	182	145	121	104	91	73	61	52	16 J 7
16 J 8		8600	391	335	293	276	261	247	235	223	213	204	195	156	130	112	98	78	65	56	16 J 8
18 J 5		7000	318	273	239	225	212	201	191	182	174	166	159	127	106	91	80	64	53	45	18 J 5
18 J 6		7800	355	304	266	250	236	224	213	203	193	185	177	142	118	101	89	71	59	51	18 J 6
18 J 7		8400	382	327	286	270	255	241	229	218	208	199	191	153	127	109	95	76	64	55	18 J 7
18 J 8		9000	409	351	307	289	273	258	245	234	223	213	205	164	136	117	102	82	68	58	18 J 8
20 J 5		7600	345	296	259	244	230	218	207	197	188	180	173	138	115	99	86	69	58	49	20 J 5
20 J 6		8200	373	319	280	263	248	235	224	213	203	194	186	149	124	106	93	75	62	53	20 J 6
20 J 7		8600	391	335	293	276	261	247	235	223	213	204	195	156	130	112	98	78	65	56	20 J 7
20 J 8		9200	418	358	314	295	279	264	251	239	228	218	209	167	139	119	105	84	70	60	20 J 8
22 J 6		8400	382	327	286	270	255	241	229	218	208	199	191	153	127	109	95	76	64	55	22 J 6
22 J 7		9000	409	351	307	289	273	258	245	234	223	213	205	164	136	117	102	82	68	58	22 J 7
22 J 8		9600	436	374	327	308	291	276	262	249	238	228	218	175	145	125	109	87	73	62	22 J 8
12 J 2	23'-0"	2460	107	92	80	76	71	68	64	61	58	56	54	43	36	31	—	—	—	—	12 J 2
12 J 3		3130	136	117	102	96	91	86	82	78	74	71	68	54	45	39	34	—	—	—	12 J 3
12 J 4		3910	170	146	128	120	113	107	102	97	93	89	85	68	57	49	43	34	—	—	12 J 4
12 J 5		4670	203	174	152	143	135	128	122	116	111	106	101	81	68	58	51	41	34	—	12 J 5
12 J 6		5680	247	212	185	174	165	156	148	141	135	129	124	99	82	71	62	49	41	35	12 J 6
14 J 3		3680	160	137	120	113	107	101	96	91	87	84	80	64	53	46	40	32	—	—	14 J 3
14 J 4		4610	200	172	150	141	134	127	120	115	109	105	100	80	67	57	50	40	33	—	14 J 4
14 J 5		5510	239	205	180	169	160	151	144	137	131	125	120	96	80	68	60	48	40	34	14 J 5
14 J 6		6670	290	248	217	205	193	183	174	166	158	151	145	116	97	83	72	58	48	41	14 J 6
14 J 7		7400	322	276	241	227	214	203	193	184	175	168	161	129	107	92	80	64	54	46	14 J 7
16 J 4		5010	218	187	164	154	145	138	131	125	119	114	109	87	73	62	55	44	36	31	16 J 4
16 J 5		6260	272	233	204	192	181	172	163	156	148	142	136	109	91	78	68	54	45	39	16 J 5
16 J 6		7200	313	268	235	221	209	198	188	179	171	163	157	125	104	89	78	63	52	45	16 J 6
16 J 7		8000	348	298	261	246	232	220	209	199	190	181	174	139	116	99	87	70	58	50	16 J 7
16 J 8		8600	374	320	280	264	249	236	224	214	204	195	187	150	125	107	93	75	62	53	16 J 8
18 J 5		7000	304	261	228	215	203	192	183	174	166	159	152	122	101	87	76	61	51	43	18 J 5
18 J 6		7800	339	291	254	239	226	214	203	194	185	177	170	136	113	97	85	68	57	48	18 J 6
18 J 7		8400	365	313	274	258	243	231	219	209	199	191	183	146	122	104	91	73	61	52	18 J 7
18 J 8		9000	391	335	293	276	261	247	235	224	213	204	196	157	130	112	98	78	65	56	18 J 8
20 J 5		7600	330	283	248	233	220	209	198	189	180	172	165	132	110	94	83	66	55	47	20 J 5
20 J 6		8200	357	306	267	252	238	225	214	204	194	186	178	143	119	102	89	71	59	51	20 J 6
20 J 7		8600	374	320	280	264	249	236	224	214	204	195	187	150	125	107	93	75	62	53	20 J 7
20 J 8		9200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	20 J 8
22 J 6		8400	365	313	274	258	243	231	219	209	199	191	183	146	122	104	91	73	61	52	22 J 6
22 J 7		9000	391	335	293	276	261	247	235	224	213	204	196	157	130	112	98	78	65	56	22 J 7
22 J 8		9600	417	358	313	295	278	264	250	239	228	218	209	167	139	119	104	83	70	60	22 J 8
12 J 2	24'-0"	2360	98	84	74	69	66	62	59	56	54	51	49	39	33	—	—	—	—	—	12 J 2
12 J 3		3000	125	107	94	88	83	79	75	71	68	65	63	50	42	36	31	—	—	—	12 J 3

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			* 12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″	
12 J 4	24′-0″	3750	156	134	117	110	104	99	94	89	85	82	78	63	52	45	39	31	—	—	12 J 4
12 J 5		4470	186	160	140	132	124	118	112	106	102	97	93	75	62	53	47	37	31	—	12 J 5
12 J 6		5440	227	194	170	160	151	143	136	130	124	118	113	91	76	65	57	45	38	32	12 J 6
14 J 3		3530	147	126	110	104	98	93	88	84	80	77	73	59	49	42	37	—	—	—	14 J 3
14 J 4		4420	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	14 J 4
14 J 5		5280	220	188	165	155	147	139	132	126	120	115	110	88	73	63	55	44	37	31	14 J 5
14 J 6		6390	266	228	200	188	177	168	160	152	145	139	133	106	89	76	67	53	44	38	14 J 6
14 J 7		7400	308	264	231	218	206	195	185	176	168	161	154	123	103	88	77	62	51	44	14 J 7
16 J 4		4810	200	172	150	141	133	126	120	114	109	104	100	80	67	57	50	40	33	—	16 J 4
16 J 5		6000	250	214	188	176	167	158	150	143	136	130	125	100	83	71	63	50	42	36	16 J 5
16 J 6		7170	299	256	224	211	199	189	179	171	163	156	149	119	100	85	75	60	50	43	16 J 6
16 J 7		8000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	16 J 7
16 J 8		8600	358	307	269	253	239	226	215	205	195	187	179	143	119	102	90	72	60	51	16 J 8
18 J 5		6750	281	241	211	199	188	178	169	161	153	147	141	113	94	80	70	56	47	40	18 J 5
18 J 6		7800	325	279	244	229	217	205	195	186	177	170	163	130	108	93	81	65	54	46	18 J 6
18 J 7		8400	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	18 J 7
18 J 8		9000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	63	54	18 J 8
20 J 5		7360	307	263	230	216	204	194	184	175	167	160	153	123	102	88	77	61	51	44	20 J 5
20 J 6		8200	342	293	256	241	228	216	205	195	186	178	171	137	114	98	85	68	57	49	20 J 6
20 J 7		8600	358	307	269	253	239	226	215	205	195	187	179	143	119	102	90	72	60	51	20 J 7
20 J 8		9200	383	329	288	271	256	242	230	219	209	200	192	153	128	110	96	77	64	55	20 J 8
22 J 6		8400	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	22 J 6
22 J 7		9000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	63	54	22 J 7
22 J 8		9600	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	22 J 8
24 J 6		8800	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52	24 J 6
24 J 7		9400	392	336	294	276	261	247	235	224	214	204	196	157	131	112	98	78	65	56	24 J 7
24 J 8		10000	417	357	313	294	278	263	250	238	227	217	208	167	139	119	104	83	69	60	24 J 8
14 J 3	25′-0″	3390	135	116	102	96	90	86	81	77	74	71	68	54	45	39	34	—	—	—	14 J 3
14 J 4		4240	170	145	127	120	113	107	102	97	93	88	85	68	57	48	42	34	—	—	14 J 4
14 J 5		5070	203	174	152	143	135	128	122	116	111	106	101	81	68	58	51	41	34	—	14 J 5
14 J 6		6130	245	210	184	173	164	155	147	140	134	128	123	98	82	70	61	49	41	35	14 J 6
14 J 7		7360	294	252	221	208	196	186	177	168	161	154	147	118	98	84	74	59	49	42	14 J 7
16 J 4		4610	185	158	138	130	123	117	111	105	101	96	92	74	62	53	46	37	31	—	16 J 4
16 J 5		5760	230	197	173	163	154	146	138	132	126	120	115	92	77	66	58	46	38	33	16 J 5
16 J 6		6880	275	236	206	194	183	174	165	157	150	144	138	110	92	79	69	55	46	39	16 J 6
16 J 7		8000	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	16 J 7
16 J 8		8600	344	295	258	243	229	217	206	197	188	179	172	138	115	98	86	69	57	49	16 J 8
18 J 5		6480	259	222	194	183	173	164	156	148	141	135	130	104	86	74	65	52	43	37	18 J 5
18 J 6		7800	312	267	234	220	208	197	187	178	170	163	156	125	104	89	78	62	52	45	18 J 6
18 J 7		8400	336	288	252	237	224	212	202	192	183	175	168	134	112	96	84	67	56	48	18 J 7
18 J 8		9000	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	18 J 8
20 J 5		7070	283	242	212	200	188	179	170	162	154	147	141	113	94	81	71	57	47	40	20 J 5
20 J 6		8200	328	281	246	232	219	207	197	187	179	171	164	131	109	94	82	66	55	47	20 J 6
20 J 7		8600	344	295	258	243	229	217	206	197	188	179	172	138	115	98	86	69	57	49	20 J 7
20 J 8		9200	368	315	276	260	245	232	221	210	201	192	184	147	123	105	92	74	61	53	20 J 8
22 J 6		8400	336	288	252	237	224	212	202	192	183	175	168	134	112	96	84	67	56	48	22 J 6
22 J 7		9000	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	22 J 7
22 J 8		9600	384	329	288	271	256	243	230	219	209	200	192	154	128	110	96	77	64	55	22 J 8
24 J 6		8800	352	302	264	248	235	222	211	201	192	184	176	141	117	101	88	70	59	50	24 J 6
24 J 7		9400	376	322	282	265	251	237	226	215	205	196	188	150	125	107	94	75	63	54	24 J 7
24 J 8		10000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	24 J 8
14 J 3	26′-0″	3260	125	107	94	88	83	79	75	72	68	65	63	50	42	36	31	—	—	—	14 J 3
14 J 4		4080	157	134	118	111	105	99	94	90	86	82	78	63	52	45	39	31	—	—	14 J 4
14 J 5		4870	187	161	141	132	125	118	112	107	102	98	94	75	62	54	47	37	31	—	14 J 5
14 J 6		5900	227	194	170	160	151	143	136	130	124	118	113	91	76	65	57	45	38	32	14 J 6
14 J 7		7080	272	233	204	192	181	172	163	156	148	142	136	109	91	78	68	54	45	39	14 J 7
16 J 4		4440	171	146	128	120	114	108	102	97	93	89	85	68	57	49	43	34	—	—	16 J 4
16 J 5		5540	213	183	160	150	142	135	128	122	116	111	107	85	71	61	53	43	36	30	16 J 5
16 J 6		6620	254	218	191	180	170	161	153	145	139	133	127	102	85	73	64	51	42	36	16 J 6
16 J 7		7950	306	262	229	216	204	193	183	175	167	160	153	122	102	87	76	61	51	44	16 J 7
16 J 8		8600	331	284	248	233	221	209	198	189	180	173	165	132	110	95	83	66	55	47	16 J 8
18 J 5		6230	240	205	180	169	160	151	144	137	131	125	120	96	80	68	60	48	40	34	18 J 5

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
18 J 6	26'-0"	7510	289	248	217	204	193	183	173	165	158	151	144	116	96	83	72	58	48	41	18 J 6
18 J 7		8400	323	277	242	228	215	204	194	185	176	169	162	129	108	92	81	65	54	46	18 J 7
18 J 8		9000	346	297	260	244	231	219	208	198	189	181	173	138	115	99	87	69	58	49	18 J 8
20 J 5		6790	261	224	196	184	174	165	157	149	143	136	131	105	87	75	65	52	44	37	20 J 5
20 J 6		8100	312	267	234	220	208	197	187	178	170	163	156	125	104	89	78	62	52	45	20 J 6
20 J 7		8600	331	284	248	233	221	209	198	189	180	173	165	132	110	95	83	66	55	47	20 J 7
20 J 8		9200	354	303	265	250	236	223	212	202	193	185	177	142	118	101	88	71	59	51	20 J 8
22 J 6		8400	323	277	242	228	215	204	194	185	176	169	162	129	108	92	81	65	54	46	22 J 6
22 J 7		9000	346	297	260	244	231	219	208	198	189	181	173	138	115	99	87	69	58	49	22 J 7
22 J 8		9600	369	316	277	261	246	233	222	211	201	193	185	148	123	105	92	74	62	53	22 J 8
24 J 6		8800	338	290	254	239	226	214	203	193	185	177	169	135	113	97	85	68	56	48	24 J 6
24 J 7		9400	362	310	271	255	241	228	217	207	197	189	181	145	121	103	90	72	60	52	24 J 7
24 J 8		10000	385	330	288	271	256	243	231	220	210	201	192	154	128	110	96	77	64	55	24 J 8
14 J 3	27'-0"	3140	116	100	87	82	77	73	70	66	63	61	58	46	39	33	—	—	—	—	14 J 3
14 J 4		3930	145	125	109	103	97	92	87	83	79	76	73	58	48	42	36	—	—	—	14 J 4
14 J 5		4690	174	149	130	123	116	110	104	99	95	91	87	70	58	50	43	35	—	—	14 J 5
14 J 6		5680	210	180	158	148	140	133	126	120	115	110	105	84	70	60	53	42	35	30	14 J 6
14 J 7		6810	252	216	189	178	168	159	151	144	138	132	126	101	84	72	63	50	42	36	14 J 7
16 J 4		4270	158	136	119	112	105	100	95	90	86	83	79	63	53	45	40	32	—	—	16 J 4
16 J 5		5330	198	169	148	139	132	125	119	113	108	103	99	79	66	56	49	40	33	—	16 J 5
16 J 6		6370	236	202	177	167	157	149	142	135	129	123	118	94	79	67	59	47	39	34	16 J 6
16 J 7		7650	283	243	213	200	189	179	170	162	155	148	142	113	94	81	71	57	47	40	16 J 7
16 J 8		8600	319	273	239	225	212	201	191	182	174	166	159	127	106	91	80	64	53	46	16 J 8
18 J 5		6000	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	18 J 5
18 J 6		7230	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	18 J 6
18 J 7		8400	311	267	233	220	207	196	187	178	170	162	156	124	104	89	78	62	52	44	18 J 7
18 J 8		9000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	18 J 8
20 J 5		6540	242	208	182	171	162	153	145	138	132	126	121	97	81	69	61	48	40	35	20 J 5
20 J 6		7800	289	248	217	204	193	183	173	165	158	151	144	116	96	83	72	58	48	41	20 J 6
20 J 7		8600	319	273	239	225	212	201	191	182	174	166	159	127	106	91	80	64	53	46	20 J 7
20 J 8		9200	341	292	256	241	227	215	204	195	186	178	170	136	114	97	85	68	57	49	20 J 8
22 J 6		8270	306	263	230	216	204	193	184	175	167	160	153	123	102	88	77	61	51	44	22 J 6
22 J 7		9000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	22 J 7
22 J 8		9600	356	305	267	251	237	225	213	203	194	186	178	142	119	102	89	71	59	51	22 J 8
24 J 6		8800	326	279	244	230	217	206	196	186	178	170	163	130	109	93	81	65	54	47	24 J 6
24 J 7		9400	348	298	261	246	232	220	209	199	190	182	174	139	116	99	87	70	58	50	24 J 7
24 J 8		10000	370	317	278	261	247	234	222	212	202	193	185	148	123	106	93	74	62	53	24 J 8
14 J 3	28'-0"	3020	108	93	81	76	72	68	65	62	59	56	54	43	36	31	—	—	—	—	14 J 3
14 J 4		3790	135	116	101	95	90	85	81	77	74	71	68	54	45	39	34	—	—	—	14 J 4
14 J 5		4520	162	138	121	114	108	102	97	92	88	84	81	65	54	46	40	32	—	—	14 J 5
14 J 6		5480	196	168	147	138	130	124	117	112	107	102	98	78	65	56	49	39	33	—	14 J 6
14 J 7		6570	235	201	176	166	156	148	141	134	128	122	117	94	78	67	59	47	39	34	14 J 7
16 J 4		4120	147	126	110	104	98	93	88	84	80	77	74	59	49	42	37	—	—	—	16 J 4
16 J 5		5140	184	157	138	130	122	116	110	105	100	96	92	73	61	52	46	37	31	—	16 J 5
16 J 6		6140	219	188	165	155	146	139	132	125	120	114	110	88	73	63	55	44	37	31	16 J 6
16 J 7		7380	264	226	198	186	176	166	158	151	144	138	132	105	88	75	66	53	44	38	16 J 7
16 J 8		8550	305	262	229	215	204	193	183	174	167	159	153	122	102	87	76	61	51	44	16 J 8
18 J 5		5790	207	177	155	146	138	131	124	118	113	108	103	83	69	59	52	41	34	30	18 J 5
18 J 6		6980	249	214	187	176	166	157	149	142	136	130	125	100	83	71	62	50	42	36	18 J 6
18 J 7		8380	299	257	224	211	200	189	180	171	163	156	150	120	100	86	75	60	50	43	18 J 7
18 J 8		9000	321	276	241	227	214	203	193	184	175	168	161	129	107	92	80	64	54	46	18 J 8
20 J 5		6310	225	193	169	159	150	142	135	129	123	118	113	90	75	64	56	45	38	32	20 J 5
20 J 6		7520	269	230	202	190	179	170	161	154	147	140	134	107	90	77	67	54	45	38	20 J 6
20 J 7		8600	307	263	230	217	205	194	184	176	168	160	154	123	102	88	77	61	51	44	20 J 7
20 J 8		9200	329	282	246	232	219	208	197	188	179	171	164	131	110	94	82	66	55	47	20 J 8
22 J 6		7980	285	244	214	201	190	180	171	163	155	149	142	114	95	81	71	57	47	41	22 J 6
22 J 7		9000	321	276	241	227	214	203	193	184	175	168	161	129	107	92	80	64	54	46	22 J 7
22 J 8		9600	343	294	257	242	229	217	206	196	187	179	171	137	114	98	86	69	57	49	22 J 8
24 J 6		8740	312	267	234	220	208	197	187	178	170	163	156	125	104	89	78	62	52	45	24 J 6
24 J 7		9400	336	288	252	237	224	212	201	192	183	175	168	134	112	96	84	67	56	48	24 J 7
24 J 8		10000	357	306	268	252	238	226	214	204	195	186	179	143	119	102	89	71	60	51	24 J 8

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″	
16 J 4	29′-0″	3980	137	118	103	97	91	87	82	78	75	72	69	55	46	39	34	—	—	—	16 J 4
16 J 5		4970	171	147	128	121	114	108	103	98	93	89	86	68	57	49	43	34	—	—	16 J 5
16 J 6		5930	205	175	153	144	136	129	123	117	112	107	102	82	68	58	51	41	34	—	16 J 6
16 J 7		7130	246	211	184	173	164	155	147	140	134	128	123	98	82	70	61	49	41	35	16 J 7
16 J 8		8250	285	244	213	201	190	180	171	163	155	148	142	114	95	81	71	57	47	41	16 J 8
18 J 5		5590	193	165	144	136	128	122	116	110	105	100	96	77	64	55	48	39	32	—	18 J 5
18 J 6		6740	232	199	174	164	155	147	139	133	127	121	116	93	77	66	58	46	39	33	18 J 6
18 J 7		8090	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	47	40	18 J 7
18 J 8		9000	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	18 J 8
20 J 5		6090	210	180	158	148	140	133	126	120	115	110	105	84	70	60	53	42	35	30	20 J 5
20 J 6		7260	250	215	188	177	167	158	150	143	137	131	125	100	83	72	63	50	42	36	20 J 6
20 J 7		8600	297	254	222	209	198	187	178	169	162	155	148	119	99	85	74	59	49	42	20 J 7
20 J 8		9200	317	272	238	224	211	200	190	181	173	166	159	127	106	91	79	63	53	45	20 J 8
22 J 6		7700	266	228	199	187	177	168	159	152	145	139	133	106	89	76	66	53	44	38	22 J 6
22 J 7		9000	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	22 J 7
22 J 8		9600	331	284	248	234	221	209	199	189	181	173	166	132	110	95	83	66	55	47	22 J 8
24 J 6		8440	291	249	218	205	194	184	175	166	159	152	145	116	97	83	73	58	48	42	24 J 6
24 J 7		9400	324	278	243	229	216	205	194	185	177	169	162	130	108	93	81	65	54	46	24 J 7
24 J 8		10000	345	296	259	243	230	218	207	197	188	180	172	138	115	99	86	69	57	49	24 J 8
16 J 4	30′-0″	3840	128	110	96	90	85	81	77	73	70	67	64	51	43	37	32	—	—	—	16 J 4
16 J 5		4800	160	137	120	113	107	101	96	91	87	83	80	64	53	46	40	32	—	—	16 J 5
16 J 6		5730	191	164	143	135	127	121	115	109	104	100	96	76	64	55	48	38	32	—	16 J 6
16 J 7		6890	230	197	172	162	153	145	138	131	125	120	115	92	77	66	57	46	38	33	16 J 7
16 J 8		7980	266	228	199	188	177	168	160	152	145	139	133	106	89	76	66	53	44	38	16 J 8
18 J 5		5400	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	18 J 5
18 J 6		6510	217	186	163	153	145	137	130	124	118	113	109	87	72	62	54	43	36	31	18 J 6
18 J 7		7820	261	223	196	184	174	165	156	149	142	136	130	104	87	74	65	52	43	37	18 J 7
18 J 8		9000	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	18 J 8
20 J 5		5890	196	168	147	139	131	124	118	112	107	102	98	79	65	56	49	39	33	—	20 J 5
20 J 6		7020	234	201	176	165	156	148	140	134	128	122	117	94	78	67	59	47	39	33	20 J 6
20 J 7		8490	283	243	212	200	189	179	170	162	154	148	141	113	94	81	71	57	47	40	20 J 7
20 J 8		9200	307	263	230	216	204	194	184	175	167	160	153	123	102	88	77	61	51	44	20 J 8
22 J 6		7440	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	22 J 6
22 J 7		9000	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	22 J 7
22 J 8		9600	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	22 J 8
24 J 6		8160	272	233	204	192	181	172	163	155	148	142	136	109	91	78	68	54	45	39	24 J 6
24 J 7		9400	313	269	235	221	209	198	188	179	171	163	157	125	104	90	78	63	52	45	24 J 7
24 J 8		10000	333	286	250	235	222	211	200	190	182	174	167	133	111	95	83	67	56	48	24 J 8
16 J 4	31′-0″	3720	120	103	90	85	80	76	72	69	65	63	60	48	40	34	30	—	—	—	16 J 4
16 J 5		4650	150	128	112	106	100	95	90	86	82	78	75	60	50	43	37	30	—	—	16 J 5
16 J 6		5550	179	153	134	126	119	113	107	102	98	93	89	72	60	51	45	36	30	—	16 J 6
16 J 7		6670	215	184	161	152	143	136	129	123	117	112	108	86	72	61	54	43	36	31	16 J 7
16 J 8		7720	249	213	187	176	166	157	149	142	136	130	125	100	83	71	62	50	42	36	16 J 8
18 J 5		5230	169	144	126	119	112	106	101	96	92	88	84	67	56	48	42	34	—	—	18 J 5
18 J 6		6300	203	174	152	143	136	128	122	116	111	106	102	81	68	58	51	41	34	—	18 J 6
18 J 7		7570	244	209	183	172	163	154	147	140	133	127	122	98	81	70	61	49	41	35	18 J 7
18 J 8		8730	282	241	211	199	188	178	169	161	154	147	141	113	94	80	70	56	47	40	18 J 8
20 J 5		5700	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	20 J 5
20 J 6		6800	219	188	164	155	146	138	132	125	120	114	110	88	73	63	55	44	37	31	20 J 6
20 J 7		8220	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	20 J 7
20 J 8		9200	297	254	223	209	198	187	178	170	162	155	148	119	99	85	74	59	49	42	20 J 8
22 J 6		7200	232	199	174	164	155	147	139	133	127	121	116	93	77	66	58	46	39	33	22 J 6
22 J 7		9000	290	249	218	205	194	183	174	166	158	151	145	116	97	83	73	58	48	41	22 J 7
22 J 8		9600	310	265	232	219	206	196	186	177	169	162	155	124	103	88	77	62	52	44	22 J 8
24 J 6		7890	255	218	191	180	170	161	153	145	139	133	127	102	85	73	64	51	42	36	24 J 6
24 J 7		9400	303	260	227	214	202	192	182	173	165	158	152	121	101	87	76	61	51	43	24 J 7
24 J 8		10000	323	276	242	228	215	204	194	184	176	168	161	129	108	92	81	65	54	46	24 J 8
16 J 4	32′-0″	3600	113	97	84	80	75	71	68	64	61	59	56	45	38	32	—	—	—	—	16 J 4
16 J 5		4500	141	121	105	99	94	89	84	80	77	73	70	56	47	40	35	—	—	—	16 J 5
16 J 6		5380	168	144	126	119	112	106	101	96	92	88	84	67	56	48	42	34	—	—	16 J 6
16 J 7		6460	202	173	151	142	135	127	121	115	110	105	101	81	67	58	50	40	34	—	16 J 7

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			* 12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″	
16 J 8	32′-0″	7480	234	200	175	165	156	148	140	134	127	122	117	93	78	67	58	47	39	33	16 J 8
18 J 5		5060	158	136	119	112	105	100	95	90	86	83	79	63	53	45	40	32	—	—	18 J 5
18 J 6		6100	191	163	143	135	127	120	114	109	104	100	95	76	64	55	48	38	32	—	18 J 6
18 J 7		7330	229	196	172	162	153	145	137	131	125	120	115	92	76	65	57	46	38	33	18 J 7
18 J 8		8460	264	227	198	187	176	167	159	151	144	138	132	106	88	76	66	53	44	38	18 J 8
20 J 5		5520	173	148	129	122	115	109	104	99	94	90	86	69	58	49	43	35	—	—	20 J 5
20 J 6		6580	206	176	154	145	137	130	123	118	112	107	103	82	69	59	51	41	34	—	20 J 6
20 J 7		7960	249	213	187	176	166	157	149	142	136	130	124	99	83	71	62	50	41	36	20 J 7
20 J 8		9200	288	246	216	203	192	182	172	164	157	150	144	115	96	82	72	58	48	41	20 J 8
22 J 6		6980	218	187	164	154	145	138	131	125	119	114	109	87	73	62	55	44	36	31	22 J 6
22 J 7		8750	273	234	205	193	182	173	164	156	149	143	137	109	91	78	68	55	46	39	22 J 7
22 J 8		9600	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	22 J 8
24 J 6		7650	239	205	179	169	159	151	143	137	130	125	119	96	80	68	60	48	40	34	24 J 6
24 J 7		9400	294	252	220	207	196	186	176	168	160	153	147	118	98	84	73	59	49	42	24 J 7
24 J 8		10000	313	268	234	221	208	197	187	179	170	163	156	125	104	89	78	63	52	45	24 J 8
18 J 5	33′-0″	4910	149	128	112	105	99	94	89	85	81	78	74	60	50	43	37	30	—	—	18 J 5
18 J 6		5920	179	154	135	127	120	113	108	102	98	94	90	72	60	51	45	36	30	—	18 J 6
18 J 7		7110	215	185	162	152	144	136	129	123	118	112	108	86	72	62	54	43	36	31	18 J 7
18 J 8		8200	249	213	186	175	166	157	149	142	136	130	124	99	83	71	62	50	41	36	18 J 8
20 J 5		5350	162	139	122	115	108	102	97	93	88	85	81	65	54	46	41	32	—	—	20 J 5
20 J 6		6380	193	166	145	137	129	122	116	111	106	101	97	77	64	55	48	39	32	—	20 J 6
20 J 7		7720	234	200	175	165	156	148	140	134	128	122	117	94	78	67	58	47	39	33	20 J 7
20 J 8		9190	279	239	209	197	186	176	167	159	152	145	139	111	93	80	70	56	46	40	20 J 8
22 J 6		6770	205	176	154	145	137	130	123	117	112	107	103	82	68	59	51	41	34	—	22 J 6
22 J 7		8480	257	220	193	181	171	162	154	147	140	134	129	103	86	73	64	51	43	37	22 J 7
22 J 8		9600	291	249	218	205	194	184	175	166	159	152	145	116	97	83	73	58	48	42	22 J 8
24 J 6		7410	225	193	169	159	150	142	135	128	123	117	112	90	75	64	56	45	37	32	24 J 6
24 J 7		9290	282	241	211	199	188	178	169	161	154	147	141	113	94	80	70	56	47	40	24 J 7
24 J 8		10000	303	260	227	214	202	191	182	173	165	158	152	121	101	87	76	61	51	43	24 J 8
18 J 5	34′-0″	4760	140	120	105	99	93	89	84	80	76	73	70	56	47	40	35	—	—	—	18 J 5
18 J 6		5750	169	145	127	119	113	107	101	97	92	88	84	68	56	48	42	34	—	—	18 J 6
18 J 7		6900	203	174	152	143	135	128	122	116	111	106	101	81	68	58	51	41	34	—	18 J 7
18 J 8		7960	234	201	176	165	156	148	140	134	128	122	117	94	78	67	59	47	39	33	18 J 8
20 J 5		5200	153	131	115	108	102	97	92	87	83	80	76	61	51	44	38	31	—	—	20 J 5
20 J 6		6200	182	156	137	129	121	115	109	104	99	95	91	73	61	52	46	36	30	—	20 J 6
20 J 7		7490	220	189	165	156	147	139	132	126	120	115	110	88	73	63	55	44	37	31	20 J 7
20 J 8		8920	262	225	197	185	175	166	157	150	143	137	131	105	87	75	66	52	44	37	20 J 8
22 J 6		6570	193	166	145	136	129	122	116	110	105	101	97	77	64	55	48	39	32	—	22 J 6
22 J 7		8240	242	208	182	171	161	153	145	138	132	126	121	97	81	69	61	48	40	35	22 J 7
22 J 8		9600	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	22 J 8
24 J 6		7200	212	181	159	149	141	134	127	121	115	110	106	85	71	60	53	42	35	30	24 J 6
24 J 7		9020	265	227	199	187	177	168	159	152	145	138	133	106	88	76	66	53	44	38	24 J 7
24 J 8		10000	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	24 J 8
18 J 5	35′-0″	4630	132	113	99	93	88	84	79	76	72	69	66	53	44	38	33	—	—	—	18 J 5
18 J 6		5580	159	137	120	113	106	101	96	91	87	83	80	64	53	46	40	32	—	—	18 J 6
18 J 7		6700	192	164	144	135	128	121	115	109	104	100	96	77	64	55	48	38	32	—	18 J 7
18 J 8		7730	221	189	166	156	147	140	133	126	121	115	110	88	74	63	55	44	37	32	18 J 8
20 J 5		5050	144	124	108	102	96	91	87	82	79	75	72	58	48	41	36	—	—	—	20 J 5
20 J 6		6020	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	20 J 6
20 J 7		7280	208	178	156	147	139	131	125	119	113	108	104	83	69	59	52	42	35	30	20 J 7
20 J 8		8670	248	212	186	175	165	156	149	141	135	129	124	99	83	71	62	50	41	35	20 J 8
22 J 6		6380	182	156	137	129	122	115	109	104	99	95	91	73	61	52	46	36	30	—	22 J 6
22 J 7		8000	229	196	171	161	152	144	137	131	125	119	114	91	76	65	57	46	38	33	22 J 7
22 J 8		9390	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	22 J 8
24 J 6		6990	200	171	150	141	133	126	120	114	109	104	100	80	67	57	50	40	33	—	24 J 6
24 J 7		8760	250	215	188	177	167	158	150	143	137	131	125	100	83	72	63	50	42	36	24 J 7
24 J 8		10000	286	245	214	202	190	180	171	163	156	149	143	114	95	82	71	57	48	41	24 J 8
18 J 5	36′-0″	4500	125	107	94	88	83	79	75	71	68	65	63	50	42	36	31	—	—	—	18 J 5
18 J 6		5430	151	129	113	106	100	95	90	86	82	79	75	60	50	43	38	30	—	—	18 J 6
18 J 7		6520	181	155	136	128	121	114	109	103	99	94	91	72	60	52	45	36	30	—	18 J 7

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			*12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″	
18 J 8	36′-0″	7520	209	179	157	147	139	132	125	119	114	109	104	84	70	60	52	42	35	30	18 J 8
20 J 5		4910	136	117	102	96	91	86	82	78	74	71	68	55	45	39	34	—	—	—	20 J 5
20 J 6		5850	163	139	122	115	108	103	98	93	89	85	81	65	54	46	41	33	—	—	20 J 6
20 J 7		7070	197	168	147	139	131	124	118	112	107	103	98	79	66	56	49	39	33	—	20 J 7
20 J 8		8430	234	201	176	165	156	148	140	134	128	122	117	94	78	67	59	47	39	33	20 J 8
22 J 6		6200	172	148	129	122	115	109	103	98	94	90	86	69	57	49	43	34	—	—	22 J 6
22 J 7		7780	216	185	162	153	144	136	130	123	118	113	108	86	72	62	54	43	36	31	22 J 7
22 J 8		9130	254	217	190	179	169	160	152	145	138	132	127	101	85	72	63	51	42	36	22 J 8
24 J 6		6800	189	162	142	133	126	119	113	108	103	98	94	76	63	54	47	38	31	—	24 J 6
24 J 7		8520	237	203	177	167	158	149	142	135	129	123	118	95	79	68	59	47	39	34	24 J 7
24 J 8		10000	278	238	208	196	185	175	167	159	152	145	139	111	93	79	69	56	46	40	24 J 8
20 J 5	37′-0″	4770	129	111	97	91	86	82	77	74	70	67	65	52	43	37	32	—	—	—	20 J 5
20 J 6		5690	154	132	115	109	103	97	92	88	84	80	77	62	51	44	38	31	—	—	20 J 6
20 J 7		6880	186	159	140	131	124	117	112	106	101	97	93	74	62	53	47	37	31	—	20 J 7
20 J 8		8200	222	190	166	156	148	140	133	127	121	116	111	89	74	63	55	44	37	32	20 J 8
22 J 6		6040	163	140	122	115	109	103	98	93	89	85	82	65	54	47	41	33	—	—	22 J 6
22 J 7		7570	205	175	153	144	136	129	123	117	112	107	102	82	68	58	51	41	34	—	22 J 7
22 J 8		8880	240	206	180	169	160	152	144	137	131	125	120	96	80	69	60	48	40	34	22 J 8
24 J 6		6610	179	153	134	126	119	113	107	102	97	93	89	71	60	51	45	36	30	—	24 J 6
24 J 7		8290	224	192	168	158	149	141	134	128	122	117	112	90	75	64	56	45	37	32	24 J 7
24 J 8		9730	263	225	197	186	175	166	158	150	143	137	131	105	88	75	66	53	44	38	24 J 8
20 J 5	38′-0″	4650	122	105	92	86	82	77	73	70	67	64	61	49	41	35	31	—	—	—	20 J 5
20 J 6		5540	146	125	109	103	97	92	88	83	80	76	73	58	49	42	36	—	—	—	20 J 6
20 J 7		6700	176	151	132	124	118	111	106	101	96	92	88	71	59	50	44	35	—	—	20 J 7
20 J 8		7980	210	180	158	148	140	133	126	120	115	110	105	84	70	60	53	42	35	30	20 J 8
22 J 6		5880	155	133	116	109	103	98	93	88	84	81	77	62	52	44	39	31	—	—	22 J 6
22 J 7		7370	194	166	145	137	129	122	116	111	106	101	97	78	65	55	48	39	32	—	22 J 7
22 J 8		8650	228	195	171	161	152	144	137	130	124	119	114	91	76	65	57	46	38	33	22 J 8
24 J 6		6440	169	145	127	120	113	107	102	97	92	88	85	68	56	48	42	34	—	—	24 J 6
24 J 7		8070	212	182	159	150	142	134	127	121	116	111	106	85	71	61	53	42	35	30	24 J 7
24 J 8		9470	249	214	187	176	166	157	150	142	136	130	125	100	83	71	62	50	42	36	24 J 8
20 J 5	39′-0″	4530	116	100	87	82	77	73	70	66	63	61	58	46	39	33	—	—	—	—	20 J 5
20 J 6		5400	139	119	104	98	92	87	83	79	76	72	69	55	46	40	35	—	—	—	20 J 6
20 J 7		6530	167	144	126	118	112	106	100	96	91	87	84	67	56	48	42	33	—	—	20 J 7
20 J 8		7780	199	171	150	141	133	126	120	114	109	104	100	80	66	57	50	40	33	—	20 J 8
22 J 6		5730	147	126	110	104	98	93	88	84	80	77	73	59	49	42	37	—	—	—	22 J 6
22 J 7		7180	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	22 J 7
22 J 8		8430	216	185	162	153	144	136	130	123	118	113	108	86	72	62	54	43	36	31	22 J 8
24 J 6		6270	161	138	121	114	107	102	97	92	88	84	80	64	54	46	40	32	—	—	24 J 6
24 J 7		7860	202	173	151	142	134	127	121	115	110	105	101	81	67	58	50	40	34	—	24 J 7
24 J 8		9230	237	203	178	167	158	149	142	135	129	123	118	95	79	68	59	47	39	34	24 J 8
20 J 5	40′-0″	4420	110	95	83	78	74	70	66	63	60	58	55	44	37	32	—	—	—	—	20 J 5
20 J 6		5270	132	113	99	93	88	83	79	75	72	69	66	53	44	38	33	—	—	—	20 J 6
20 J 7		6370	159	136	119	112	106	101	95	91	87	83	80	64	53	45	40	32	—	—	20 J 7
20 J 8		7580	190	162	142	134	126	120	114	108	103	99	95	76	63	54	47	38	32	—	20 J 8
22 J 6		5580	140	120	105	99	93	88	84	80	76	73	70	56	47	40	35	—	—	—	22 J 6
22 J 7		7000	175	150	131	124	117	111	105	100	95	91	88	70	58	50	44	35	—	—	22 J 7
22 J 8		8220	205	176	154	145	137	130	123	117	112	107	103	82	68	59	51	41	34	—	22 J 8
24 J 6		6120	153	131	115	108	102	97	92	87	83	80	76	61	51	44	38	31	—	—	24 J 6
24 J 7		7670	192	164	144	135	128	121	115	110	105	100	96	77	64	55	48	38	32	—	24 J 7
24 J 8		9000	225	193	169	159	150	142	135	129	123	117	113	90	75	64	56	45	38	32	24 J 8
22 J 6	41′-0″	5450	133	114	100	94	89	84	80	76	72	69	66	53	44	38	33	—	—	—	22 J 6
22 J 7		6830	167	143	125	118	111	105	100	95	91	87	83	67	56	48	42	33	—	—	22 J 7
22 J 8		8020	196	168	147	138	130	123	117	112	107	102	98	78	65	56	49	39	33	—	22 J 8
24 J 6		5970	146	125	109	103	97	92	87	83	79	76	73	58	49	42	36	—	—	—	24 J 6
24 J 7		7480	182	156	137	129	122	115	109	104	100	95	91	73	61	52	46	36	30	—	24 J 7
24 J 8		8780	214	184	161	151	143	135	128	122	117	112	107	86	71	61	54	43	36	31	24 J 8
22 J 6	42′-0″	5320	127	109	95	89	84	80	76	72	69	66	63	51	42	36	32	—	—	—	22 J 6
22 J 7		6670	159	136	119	112	106	100	95	91	87	83	79	63	53	45	40	32	—	—	22 J 7

*Allowable Uniform Total Load Per Foot of Joist.

LOAD AND SPACING TABLE, J-SERIES

Spacing of Joists for Design Loads (Dead Load Plus Live Load) Commonly Encountered in Floor and Roof Construction

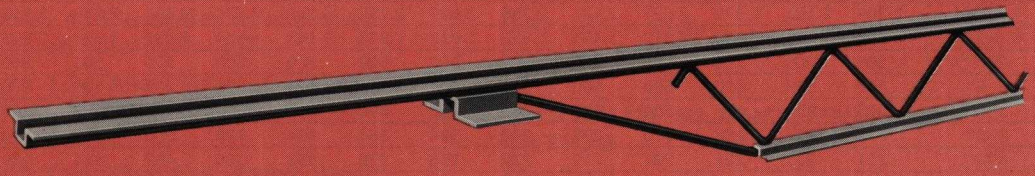
Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
22 J 8	42'-0"	7830	186	160	140	132	124	118	112	106	102	97	93	75	62	53	47	37	31	—	22 J 8
24 J 6		5830	139	119	104	98	92	88	83	79	76	72	69	55	46	40	35	—	—	—	24 J 6
24 J 7		7300	174	149	130	123	116	110	104	99	95	91	87	70	58	50	43	35	—	—	24 J 7
24 J 8		8570	204	175	153	144	136	129	122	117	111	106	102	82	68	58	51	41	34	—	24 J 8
22 J 6	43'-0"	5190	121	104	91	85	81	76	72	69	66	63	60	48	40	35	30	—	—	—	22 J 6
22 J 7		6510	151	130	114	107	101	96	91	87	83	79	76	61	50	43	38	30	—	—	22 J 7
22 J 8		7640	178	152	133	125	119	112	107	102	97	93	89	71	59	51	44	36	30	—	22 J 8
24 J 6		5690	132	113	99	93	88	84	79	76	72	69	66	53	44	38	33	—	—	—	24 J 6
24 J 7		7130	166	142	124	117	111	105	100	95	90	87	83	66	55	47	41	33	—	—	24 J 7
24 J 8		8370	195	167	146	137	130	123	117	111	106	102	97	78	65	56	49	39	32	—	24 J 8
22 J 6	44'-0"	5080	115	99	87	81	77	73	69	66	63	60	58	46	38	33	—	—	—	—	22 J 6
22 J 7		6360	145	124	108	102	96	91	87	83	79	75	72	58	48	41	36	—	—	—	22 J 7
22 J 8		7470	170	146	127	120	113	107	102	97	93	89	85	68	57	49	42	34	—	—	22 J 8
24 J 6		5560	126	108	95	89	84	80	76	72	69	66	63	51	42	36	32	—	—	—	24 J 6
24 J 7		6970	158	136	119	112	106	100	95	91	86	83	79	63	53	45	40	32	—	—	24 J 7
24 J 8		8180	186	159	139	131	124	117	112	106	101	97	93	74	62	53	46	37	31	—	24 J 8
24 J 6	45'-0"	5440	121	104	91	85	81	76	72	69	66	63	60	48	40	35	30	—	—	—	24 J 6
24 J 7		6810	151	130	114	107	101	96	91	87	83	79	76	61	50	43	38	30	—	—	24 J 7
24 J 8		8000	178	152	133	125	119	112	107	102	97	93	89	71	59	51	44	36	30	—	24 J 8
24 J 6	46'-0"	5320	116	99	87	82	77	73	69	66	63	60	58	46	39	33	—	—	—	—	24 J 6
24 J 7		6670	145	124	109	102	97	92	87	83	79	76	72	58	48	41	36	—	—	—	24 J 7
24 J 8		7830	170	146	128	120	113	107	102	97	93	89	85	68	57	49	43	34	—	—	24 J 8
24 J 6	47'-0"	5210	111	95	83	78	74	70	66	63	60	58	55	44	37	32	—	—	—	—	24 J 6
24 J 7		6520	139	119	104	98	93	88	83	79	76	72	69	56	46	40	35	—	—	—	24 J 7
24 J 8		7660	163	140	122	115	109	103	98	93	89	85	81	65	54	47	41	33	—	—	24 J 8
24 J 6	48'-0"	5100	106	91	80	75	71	67	64	61	58	55	53	42	35	30	—	—	—	—	24 J 6
24 J 7		6390	133	114	100	94	89	84	80	76	73	69	67	53	44	38	33	—	—	—	24 J 7
24 J 8		7500	156	134	117	110	104	99	94	89	85	82	78	63	52	45	39	31	—	—	24 J 8

*Allowable Uniform Total Load Per Foot of Joist.

EXTENDED ENDS

To meet the demands for joists with extended ends as required in a considerable amount of present-day construction, Truscon has designed three types of extended ends of variable lengths and carrying capacities to conform with the popular trend.

TYPE TJ 1
Extended End



TYPE TJ1 EXTENDED END LOADING TABLE FOR "O-T" JOISTS — J-SERIES

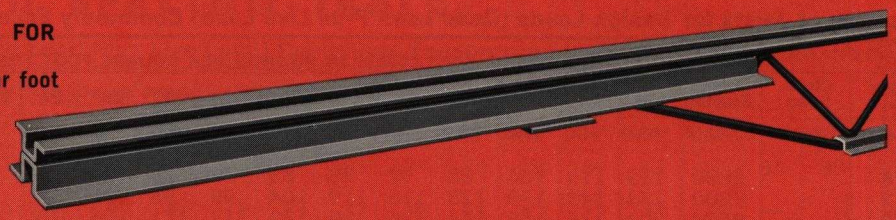
Allowable total safe loads in pounds per linear foot of cantilever spans.

	Joist Type	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4	14J5	14J6	14J7	16J4	16J5	16J6
Cantilever Spans	I — In.⁴	.072	.069	.089	.110	.072	.090	.114	.135	.157	.090	.114	.135	.157	.190	.114	.133	.161
	S — In.³	.117	.112	.142	.157	.117	.129	.162	.189	.204	.129	.162	.189	.204	.243	.162	.176	.209
	0'-6"	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	1'-0"	244	257	353	415	214	272	376	459	500	292	384	462	500	500	334	388	487
	1'-6"	108	114	157	184	95	121	167	204	229	130	171	205	232	287	149	172	216
	2'-0"	61	64	88	104	54	68	94	115	129	73	96	115	130	161	84	97	122

	Joist Type		16J7	16J8	18J5	18J6	18J7	18J8	20J5	20J6	20J7	20J8	22J6	22J7	22J8	24J6	24J7	24J8
Cantilever Spans	I — In.⁴		.186	.228	.133	.161	.198	.228	.139	.164	.190	.232	.156	.190	.228	.156	.190	.228
	S — In.³		.239	.286	.176	.209	.252	.286	.194	.225	.243	.291	.216	.243	.286	.216	.243	.286
	0'-6"		500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	1'-0"		500	500	403	497	500	500	445	500	500	500	500	500	500	500	500	500
	1'-6"		286	317	179	221	282	328	198	240	277	346	234	282	345	238	287	350
	2'-0"		161	179	101	124	159	184	111	135	156	195	132	159	194	134	161	197

TYPE TJ2 EXTENDED END LOADING TABLE FOR "O-T" JOISTS — J-SERIES

Allowable total safe loads in pounds per linear foot of cantilever spans.

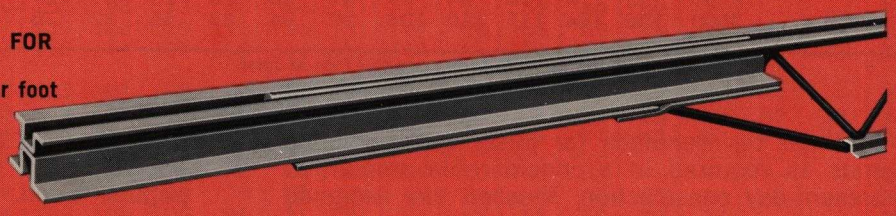


	Joist Type	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4	14J5	14J6	14J7	16J4	16J5	16J6
Cantilever Spans	I — In.⁴	.982	.957	1.122	1.378	.982	1.212	1.404	1.438	1.729	1.212	1.404	1.559	1.833	2.045	1.350	1.457	1.729
	S — In.³	.626	.608	.732	.952	.626	.813	.974	.980	1.259	.813	.974	1.108	1.389	1.599	.928	.995	1.259
	2′-0″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	2′-6″	336	332	400	500	327	427	500	500	500	432	500	500	500	500	492	500	500
	3′-0″	234	231	278	364	227	296	356	377	486	300	357	404	500	500	342	364	462
	3′-6″	172	169	204	267	167	218	261	277	357	221	262	297	373	430	251	268	340
	4′-0″	131	130	156	204	128	169	200	212	273	169	201	227	285	329	192	205	260
	4′-6″	104	102	123	162	101	132	158	167	216	133	159	179	225	260	152	162	205
	5′-0″	84	83	100	131	82	107	128	136	175	108	128	145	183	211	123	131	166
	5′-6″	69	69	83	108	67	88	106	112	144	89	106	120	151	174	102	108	137

	Joist Type	16J7	16J8	18J5	18J6	18J7	18J8	20J5	20J6	20J7	20J8	22J6	22J7	22J8	24J6	24J7	24J8
Cantilever Spans	I — In.⁴	1.993	2.263	1.662	1.860	2.094	2.263	1.583	1.751	2.045	2.287	1.704	2.045	2.263	1.704	2.045	2.263
	S — In.³	1.501	1.823	1.223	1.414	1.650	1.823	1.129	1.279	1.599	1.848	1.237	1.599	1.823	1.237	1.599	1.823
	2′-0″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	2′-6″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	3′-0″	500	500	435	500	500	500	401	453	500	500	442	500	500	444	500	500
	3′-6″	385	469	319	367	430	475	295	333	420	488	325	423	484	326	425	486
	4′-0″	295	359	244	281	329	363	226	255	322	373	249	324	370	250	326	372
	4′-6″	233	284	193	222	260	287	178	201	254	295	196	256	293	197	257	294
	5′-0″	189	230	156	180	211	233	144	163	206	239	159	207	237	160	208	238
	5′-6″	156	190	129	149	174	192	119	135	170	197	131	171	196	132	172	197

TYPE TJ3 EXTENDED END LOADING TABLE FOR "O-T" JOISTS — J-SERIES

Allowable total safe loads in pounds per linear foot of cantilever spans.



	Joist Type	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4	14J5	14J6	14J7	16J4	16J5	16J6
Cantilever Spans	I — In.⁴	2.209	2.181	2.372	2.627	2.181	2.399	2.627	2.757	3.057	2.434	2.658	2.846	3.143	3.413	2.595	2.781	3.057
	S — In.³	1.456	1.435	1.578	1.812	1.435	1.626	1.812	1.872	2.168	1.654	1.837	1.992	2.293	2.537	1.785	1.890	2.168
	2′-0″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	2′-6″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	3′-0″	375	357	392	500	377	413	455	495	500	500	500	500	500	500	500	500	500
	3′-6″	276	262	288	370	277	304	334	364	464	476	500	500	500	500	500	500	500
	4′-0″	211	201	221	284	212	232	256	278	356	365	402	434	499	500	391	412	472
	4′-6″	167	159	174	224	168	184	202	220	281	288	318	343	394	435	309	326	373
	5′-0″	135	129	141	181	136	149	164	178	228	233	257	278	319	353	250	264	302
	5′-6″	112	106	117	150	112	123	135	147	188	193	213	230	264	291	207	218	250

	Joist Type	16J7	16J8	18J5	18J6	18J7	18J8	20J5	20J6	20J7	20J8	22J6	22J7	22J8	24J6	24J7	24J8
Cantilever Spans	I — In.⁴	3.400	3.700	2.932	3.176	3.477	3.700	2.876	3.086	3.413	3.732	3.026	3.413	3.700	3.026	3.413	3.700
	S — In.³	2.456	2.800	2.103	2.322	2.596	2.800	2.017	2.192	2.537	2.829	2.142	2.537	2.800	2.142	2.537	2.800
	2′-0″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	2′-6″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	3′-0″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	3′-6″	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	4′-0″	500	500	449	492	500	500	430	465	500	500	457	500	500	458	500	500
	4′-6″	408	464	354	389	434	467	340	368	426	475	361	428	472	362	429	473
	5′-0″	330	376	287	315	352	378	275	298	345	385	292	347	382	293	347	383
	5′-6″	273	311	237	260	291	313	227	246	285	318	242	286	316	242	287	317

HOW TO FIGURE AND SPECIFY EXTENDED ENDS

The following is an example showing how to figure and specify Extended Ends.

Given a 10J3 joist carrying 205#/lin.ft. on a 17′-0″ span and requiring an extended end with 3′-6″ cantilever length.

Read "Joist Type" across top of table to 10J3. The intersection of this column with 3′-6″ length of cantilever span reads 204# for a type TJ2 extended end. Therefore specify 10J3 w/TJ2.

If required load was 264#/lin.ft. (10J3 on 15′-0″ span) follow column into the TJ3 table where this extended end will carry 288# at 3′-6″ length. In this case specify 10J3 w/TJ3.

STANDARD SPECIFICATIONS

FOR OPEN WEB STEEL JOISTS, J-SERIES

Adopted by the Steel Joist Institute May 30, 1961
Effective January 1, 1962

SECTION 1. SCOPE

These specifications cover the design, manufacture, and use of Open Web Steel Joists, J-Series, in any structure to be erected subject to the provisions of these specifications.

SECTION 2. DEFINITION

The term "Open Web Steel Joists J-Series" as used herein refers to open web, load-carrying members suitable for the direct support of floor slabs and roof decks between the masonry walls and/or structural supports in buildings, and designed in accordance with these Specifications and Standard Load Table. The terms "chord section" and "web section" as herein used shall refer to the finished shape of chord and web members, respectively.

SECTION 3. MATERIALS

3.1 STEEL

The steel used in the manufacture of chord and web sections shall conform to one of the following A.S.T.M. Specifications of latest adoption:

(a) Structural Steel, A36, modified to eliminate the upper limit on tensile strength.

(b) High Strength Low Alloy Structural Steel, A242, modified to omit the corrosion resistance requirement.

(c) High Strength Low Alloy Hot Rolled Steel Sheets and Strip, A375, modified to eliminate the corrosion resistance requirement.

(d) Flat Rolled Carbon Steel Sheets of Structural Quality, A245, Grade C, modified to minimum yield point of 36,000 p.s.i.

(e) Hot Rolled Carbon Steel Strip of Structural Quality, A303, Grade C, modified to minimum yield point of 36,000 p.s.i.

3.2 PAINT

Paint may be either of asphalt base or other protective coating of a type standard with the manufacturer.

SECTION 4. DESIGN AND MANUFACTURE

4.1 METHOD

J-Series Joists shall be designed as simply supported, uniformly loaded trusses in accordance with these specifications.

4.2 UNIT STRESSES

The components of J-Series Joists shall be so proportioned that the unit stresses in pounds per square inch shall not exceed the following:

(a) **Tension** 22,000

(b) **Compression**
For members with L/r not greater than 127 ..... $18{,}540 - 0.574\,(L/r)^2$
For members with L/r greater than 127 but not over 200 ..... $\frac{149{,}000{,}000}{(L/r)^2}$

in which "L" is the unsupported length clear of attachments and "r" is the corresponding least radius of gyration of the member or any component thereof, both in inches.

(c) **Bending** (except as specified in Section 4.4 (a)) 22,000

(d) **Welds**
Throat of fillet weld in shear 13,600
Butt weld in shear 14,300
Butt weld in tension 22,000

4.3 MAXIMUM SLENDERNESS RATIOS

Top chord	120
Compression members other than top chord	200
Tension members	240

4.4 MEMBERS

(a) **Chords**

The bottom chord shall be designed as an axially loaded tension member.

The top chord shall be designed for only axial compressive stress when the panel length clear of attachments does not exceed 27″. When the panel length clear of attachments exceeds 27″, the top chord shall be designed as a continuous member subject to combined axial and bending stresses

and shall be so proportioned that the quantity $\frac{f_a}{F_a} + \frac{f_b}{F_b}$ does not exceed unity.

In which

F_a = permissible axial unit compressive stress

F_b = permissible bending unit stress; 22,000 p.s.i. and 26,400 p.s.i. at mid-panel and at panel point respectively

f_a = actual axial unit compressive stress

f_b = actual bending unit compressive stress

The unsupported length of top chord, for the purpose of computing the permissible axial compressive stress at mid-panel and at panel point, shall be considered equal to the panel length and half the panel length respectively.

The radius of gyration of the top chord about its vertical axis shall be not less than L/170 where "L" is the maximum permissible spacing in inches between lines of bridging as specified in Section 5.4(d).

The top chord shall be considered as stayed laterally by the floor slab or roof deck provided the requirements of Section 5.8(e) of these specifications are met.

(b) **Web**

The vertical shears to be used in the design of the web members shall be determined from full uniform loading but such vertical shear shall be not less than 50% of the rated end reaction.

(c) **Bearings**

The end bearing area on supports other than steel shall be so proportioned that the bearing pressure does not exceed 250 pounds per square inch.

(d) **Fillers or Ties**

Members in compression composed of two components shall have fillers or ties spaced so that the ratio of L/r of each component shall not exceed the ratio L/r of the whole member. Members in tension composed of two components shall have fillers or ties spaced so that the ratio L/r of each component shall not exceed 240. The minimum "r" shall be used in computing the critical ratio L/r of a component.

Fillers or ties are not required in chords at end panels; or in chords at interior panels of joists having interior panel lengths, clear of attachments, of 27" or less, provided the least "r" is used in the computations of the member.

(e) **Extended Ends**

Extended ends shall be designed as cantilever beams with their reactions carried back at least to the first interior panel point of the joist.

(f) **Shape of Members**

Unstiffened projecting elements of a member subjected to axial compression or compression due to bending shall have a ratio of width to thickness not greater than 10. The width shall be measured from the free edge of the element to the toe of the fillet or bend which joins the element to the remainder of the cross section or to the toe of an effective interior stiffener. The width to thickness ratio may exceed 10 but not 27.1, provided the projecting element is stiffened at its free edge by a simple lip at right angles to the element. The over-all depth of the lip shall not be less than the applicable value given in the following table in which "w" is the width ot the element and "t" is the thickness of the material:

Width-to-Thickness Ratio of Stiffened Compression Element w/t	Minimum Depth of Stiffening Lip
10 or less	0.00
Over 10 thru 13	4.80 t
14	5.40 t
15	5.82 t
16	6.15 t
17	6.42 t
18	6.65 t
19	6.86 t
20	7.05 t
21	7.23 t
22	7.40 t
23	7.55 t
24	7.70 t
25	7.84 t
26	7.97 t
27	8.10 t
27.1	8.12 t

4.5 CONNECTIONS

(a) **Method**

Joints and connections shall be made by attaching the members to one another by arc or resistance welding or other approved method.

(b) **Strength**

Joints shall be capable of withstanding the forces due to an ultimate load equal to at least two and one-half times the SJI design load.

(c) **Splices**

Splices may occur at any point in chord or web members and shall develop the minimum allowable ultimate strength of the material in the member.

(d) **Eccentricity**

Members connected at a joint shall have their centroidal axes meet at a point if practical. Otherwise, due consideration shall be given to the effect of eccentricity. In no case shall eccentricity of any web member at a joint exceed ¾ of the over-all dimension, measured in the plane of the web, of the largest member connected. Such

eccentricity shall be the perpendicular distance from a point at the centroid of the joint located on the centroidal axis of the chord, to the centroidal axis of the web members.

Ends of joists shall be proportioned to resist bending produced by eccentricity at the support.

4.6 CAMBER

The requirement and amount of vertical camber if any shall be optional with the manufacturer. In no case will joists be manufactured with negative camber.

4.7 SHOP PAINTING

Joists and accessories shall receive one shop coat of paint as specified in Section 3.2.

SECTION 5. APPLICATION

5.1 USAGE

These specifications shall apply to any type of structure where floors and roofs are to be supported directly by steel joists installed as hereinafter specified. Where joists are used other than on simple spans under uniformly distributed loading as prescribed in Section 4.1, they shall be investigated and modified if necessary to limit the unit stresses to those listed in Section 4.2.

5.2 SPAN

The clear span of J-Series joists shall not exceed 24 times their depth.

5.3 END SUPPORTS

The ends of steel joists shall extend a distance of not less than 4 inches over masonry or poured concrete supports. The ends of joists shall extend not less than 2½ inches over steel supports except where opposite joists butt over a narrow steel support and positive attachment to the support is made by welding or bolting. In such cases a shorter end bearing length may be used when proper design provisions are made.

5.4 BRIDGING

(a) **Horizontal**
Horizontal bridging is recommended and shall consist of two continuous horizontal steel members, one attached to the top chord and the other attached to the bottom chord. Attachment to the joists shall be made by welding or mechanical means and shall be capable of resisting a horizontal force of not less than 500 pounds. The ratio of unbraced length to least radius of gyration (L/r) of the bridging member shall not exceed 300, where "L" is the distance in inches between attachments and "r" is the least radius of gyration of the bridging member. If the bridging member is a round bar, the diameter shall be at least ½ inch.

(b) **Diagonal**
When diagonal bridging is used, it shall consist of cross-bracing with L/r ratio of not more than 200, where "L" is the distance in inches between connections and "r" is the least radius of gyration of the bracing member. Where cross-bracing members are connected at their point of intersection, the "L" distance shall be taken as the distance in inches between connections at the point of intersection of the bracing members and the connections to the chord of the joists. Connections to chords of steel joists shall be made by positive mechanical means or by welding.

(c) **Sag Rods**
In roof construction, when the slope is normal to the longitudinal axis of the joist, sag rods may be used in lieu of bridging. They shall consist of steel rods not less than ½ inch in diameter and the number of lines shall be the same as that specified for bridging.

(d) **Spacing**
In no case shall the spacing of bridging or sag rods be greater than given in the following table:

Clear Span	Number of Lines of Bridging
Up to 14 feet	One row near center.
14 to 21 feet	Two rows placed at approximately 1/3 points of span.
21 to 32 feet	Three rows placed at approximately 1/4 points of span.
32 to 40 feet	Four rows placed at approximately 1/5 points of span.
40 to 48 feet	Five rows placed at approximately 1/6 points of span.

5.5 INSTALLATION OF BRIDGING

All bridging and bridging anchors shall be completely installed before construction loads are placed on the joists.

Bridging shall support the top chords against lateral movement during the construction period and shall hold the steel joists in an approximately vertical plane.

The ends of all bridging lines terminating at walls or beams shall be anchored thereto at top and bottom chords.

Welds for attachment of bridging shall not damage the joist members.

5.6 END ANCHORAGE

(a) **Masonry Supports**
Joists resting on masonry supports shall be bedded in mortar and anchored thereto with an anchor equivalent to a ⅜-inch round steel bar not less

than 8″ long. Every third joist in floors and every joist in roofs shall be anchored. In roofs where parapet walls are not present, two ½-inch anchor bolts or other equal means shall be used in lieu of the steel bar.

(b) **Steel Supports**
Ends of joists resting on steel supports shall be attached thereto by either a minimum of two welds 1 inch long, a ½-inch bolt, or a 3/16-inch round steel anchor fastened over the beam flange. The 3/16-inch round steel anchor shall not be used where wind or similar forces must be considered.

(c) **Uplift**
When uplift forces are a design consideration, roof joists shall be anchored to resist such forces.

5.7 JOIST SPACING

Joists shall be so spaced that the loading on each joist does not exceed the allowable load given for the particular designation and span in the Load Table. In floors, it is recommended that the maximum spacing be not greater than 24″.

5.8 FLOOR SLABS AND ROOF DECKS

(a) **Material**
Floor slabs and roof decks may consist of poured or precast concrete or gypsum, formed steel, wood plank, or other suitable material capable of supporting the required load at the specified joist spacing.

(b) **Thickness**
Poured slabs shall not be less than 2 inches thick.

(c) **Centering**
Centering for poured slabs may be ribbed metal lath, corrugated steel sheets, paper-backed welded wire fabric, removable centering or any other suitable material capable of supporting the slab at the designated joist spacing. Centering shall not cause lateral displacement or damage to the top chord of joists during installation or removal of the centering or placing of the concrete.

(d) **Bearing**
Slabs or decks shall bear uniformly along the top chords of the joists.

(e) **Attachments**
Attachments of slab or deck to top chords of joists shall be capable of staying the top chords laterally. The spacing of the attachments along the top chords of joists shall not exceed 36 inches.

(f) **Wood Deck**
Wood decking when placed over steel joists shall in no case have a span exceeding that which is standard practice for allowable safe loading of the particular grade and dimension of the decking employed. All such wood decks shall be securely fastened to the steel joists.

(g) **Wood Nailers**
Where wood nailers are used, such nailers in conjunction with deck or slab shall be attached to the top chords of the joists in conformance with Section 5.8(e).

5.9 DEFLECTION

The deflection due to the design live load shall not exceed 1/360 of the span.

5.10 INSPECTION

Joists shall be inspected by the manufacturer before shipment to insure compliance of materials and workmanship with the requirements of these specifications. If the purchaser wishes an inspection of the steel joists by someone other than the manufacturer's own inspectors, he may reserve the right to do so in his "Invitation To Bid" or the accompanying "Job Specifications." Arrangements shall be made with the manufacturer for such inspection of the joists at the manufacturing shop by the purchaser's inspectors at the purchaser's expense.

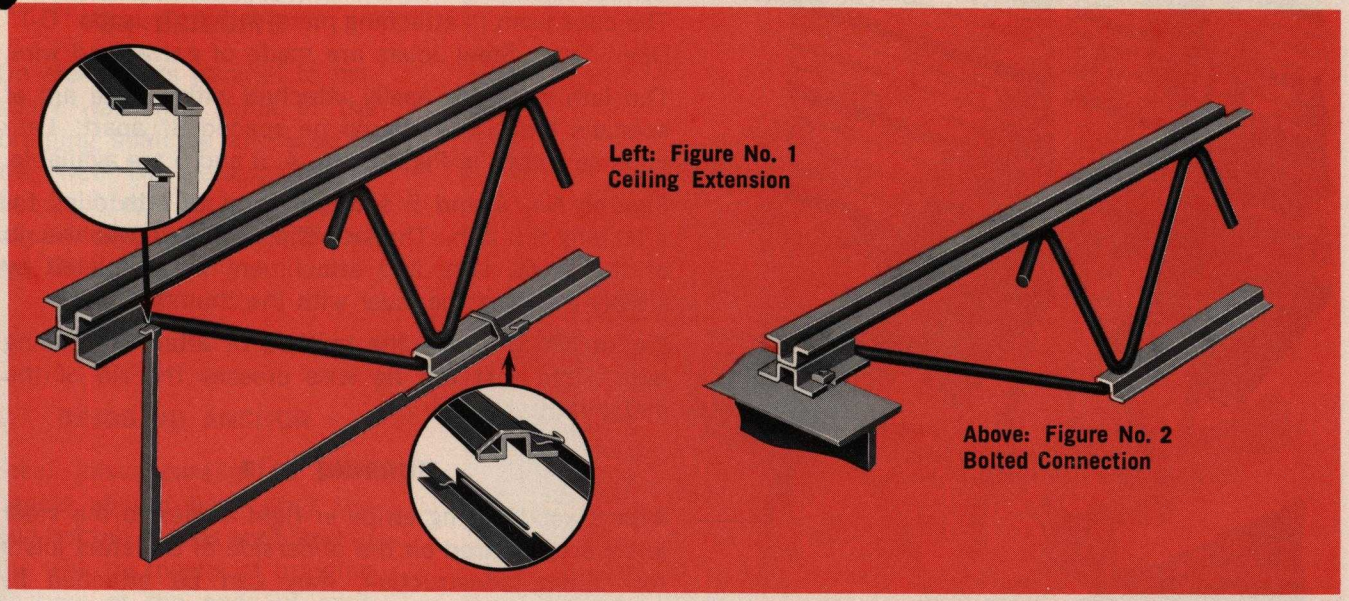
SECTION 6. HANDLING AND ERECTION

Care shall be exercised at all times to avoid damage through careless handling and storage. Joists shall be unloaded from truck or car and stacked either by hand or by crane. Dropping of joists shall not be permitted.

As soon as joists are erected, all bridging shall be completely installed and the joists permanently fastened into place before the application of any loads.

During the construction period, care shall be exercised to avoid excessive concentrated loads. Loads shall be distributed so that the carrying capacity of any steel joist is not exceeded.

TRUSCON "O-T" OPEN TRUSS STEEL JOIST CONSTRUCTION DETAILS



Left: Figure No. 1
Ceiling Extension

Above: Figure No. 2
Bolted Connection

CEILING EXTENSION

When plastered ceilings are to be attached directly to the joists, ceiling extensions of the proper size must be provided at the ends of the joists. These ceiling extensions are readily installed, without special tools, after the joists are placed. See Figure No. 1. They do not interfere with the installation of pipes along the supporting wall or structural member.

BOLTED CONNECTION

Where steel joists are required to be bolted to a supporting structural steel member, attachment is made as shown in Figure No. 2.

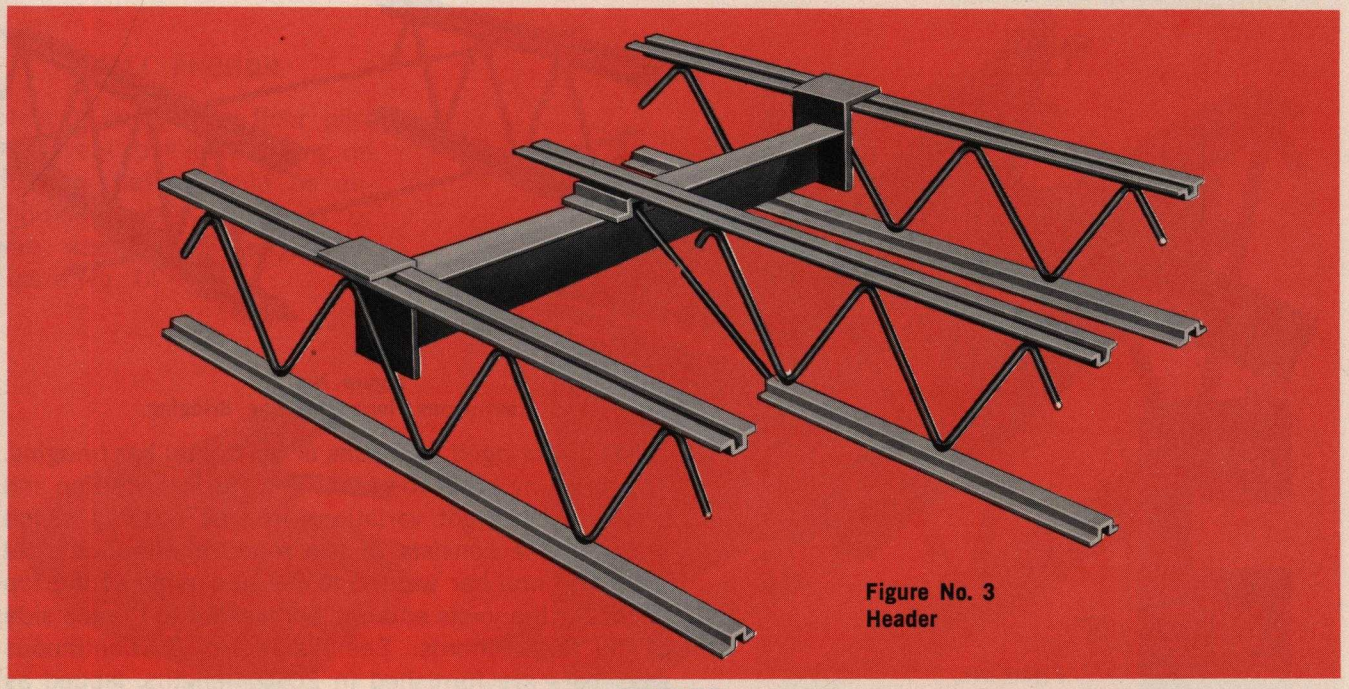


Figure No. 3
Header

HEADER

Where small openings not over 4′-0″ are required in steel joist floor or roof construction, framing can be accomplished by means of a header. The tail joist is bolted or welded to the top of the header as shown in Figure No. 3. We recommend that for openings greater than 4′-0″ the framing be accomplished by means of structural steel.

TRUSCON "O-T" OPEN TRUSS STEEL JOIST CONSTRUCTION DETAILS

Figure No. 4

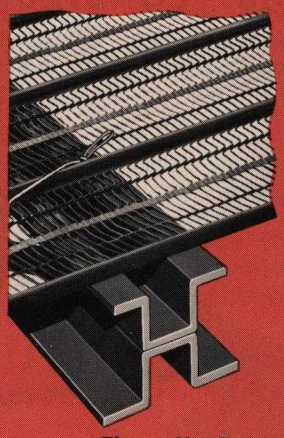


Figure No. 5

Attaching clip to top lath.
Clips hold lath firmly in place.

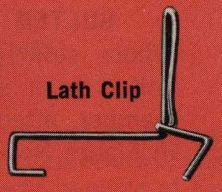
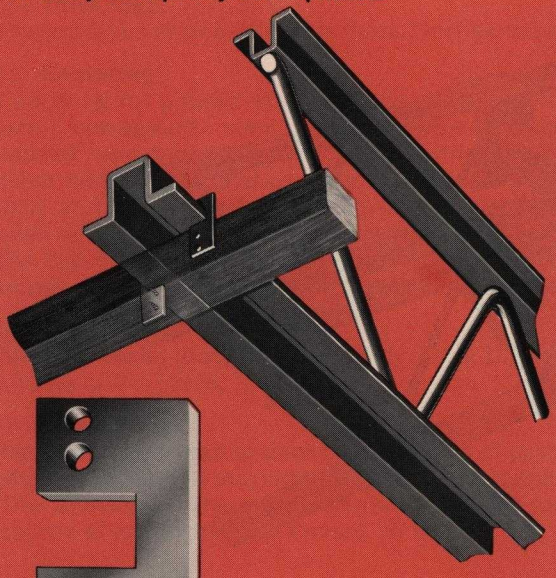


Figure No. 6
Attaching tie wire to ceiling lath is easily and quickly accomplished.



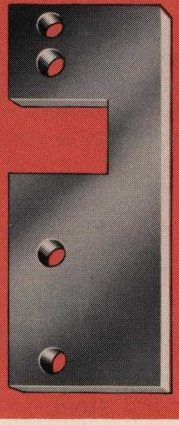


Figure No. 7
Furring Clip for use with wood furring strips.

LATH CLIPS

The clips used in attaching metal lath to Truscon "O-T" Open Truss Steel Joists are made of galvanized wire.

The lath clips are easily attached without the aid of specials tools, and should be spaced 8″ apart. Lath clips as shown in Figures No. 4, 5 and 6 are available.

Figures No. 4 and 5 show the use of lath clips for attaching top lath. The lath clip is placed over the rib of the metal lath, and attachment is completed by simply pressing the lever with the thumb.

Figure No. 6 shows the method of attaching ceiling lath. Note that the tie wire crosses the rib of the metal lath.

FURRING CLIP

Where wood furring strips at right angles to the steel joists are required on the underside of the steel joists for ceiling construction, they can be attached by means of furring clips. See Figure No. 7. These furring clips are made reversible for different thicknesses of furring strips. Two clips are attached to opposite sides of the furring strip and the bottom joist chord at each intersection.

CONTINUOUS HORIZONTAL BAR BRIDGING

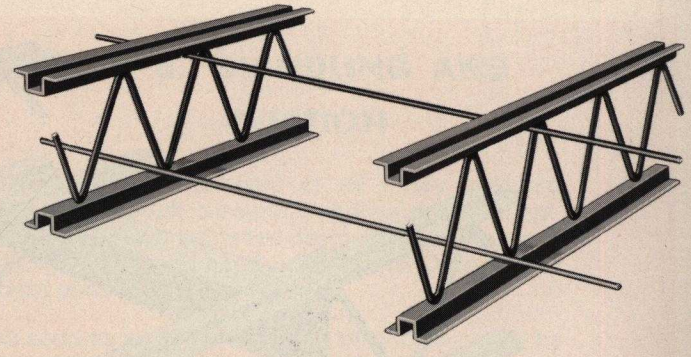


Figure No. 8
Continuous Horizontal Bar Bridging.

Joists are bridged by means of horizontal bar bridging. This bridging holds the joists in a vertical position and provides for slight variations in joist spacing. Each bridging line consists of two round continuous steel bars with one bar welded to the underside of the top chords of the joists and one bar welded to the top side of the lower chords. See Figure No. 8. Continuous steel bars are furnished in 20′-0″ lengths, lapped as required, and easily threaded through the webs of the joists. Lateral forces produced by impact to the slab immediately above the joists are quickly distributed throughout the entire floor panel.

TRUSCON "O-T" OPEN TRUSS STEEL JOIST CONSTRUCTION DETAILS

END CONNECTION FOR BRIDGING

On steel joists parallel to masonry walls the ends of the bridging shall be anchored to the wall by welding to the heads of bolts set in the wall in expansion shields. See Figure No. 9.

BRIDGING ANCHOR

Steel joists parallel to steel beams should have their top and bottom chords anchored to the wall by means of bridging anchors at the ends of each row of bridging. The bent end of the anchor should be first attached to the joist and the other end bent over the top of the steel beam as shown in Figure No. 10.

WALL ANCHOR

Ends of every third floor joist and every roof joist resting on masonry walls should be anchored thereto by means of wall anchors as shown in Figure No. 11.

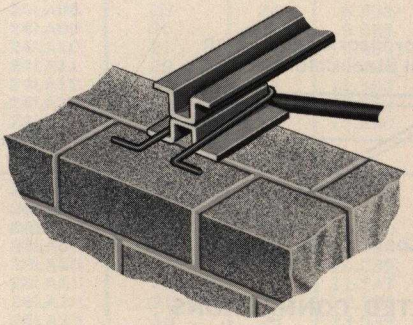


Figure No. 11
Wall Anchor.

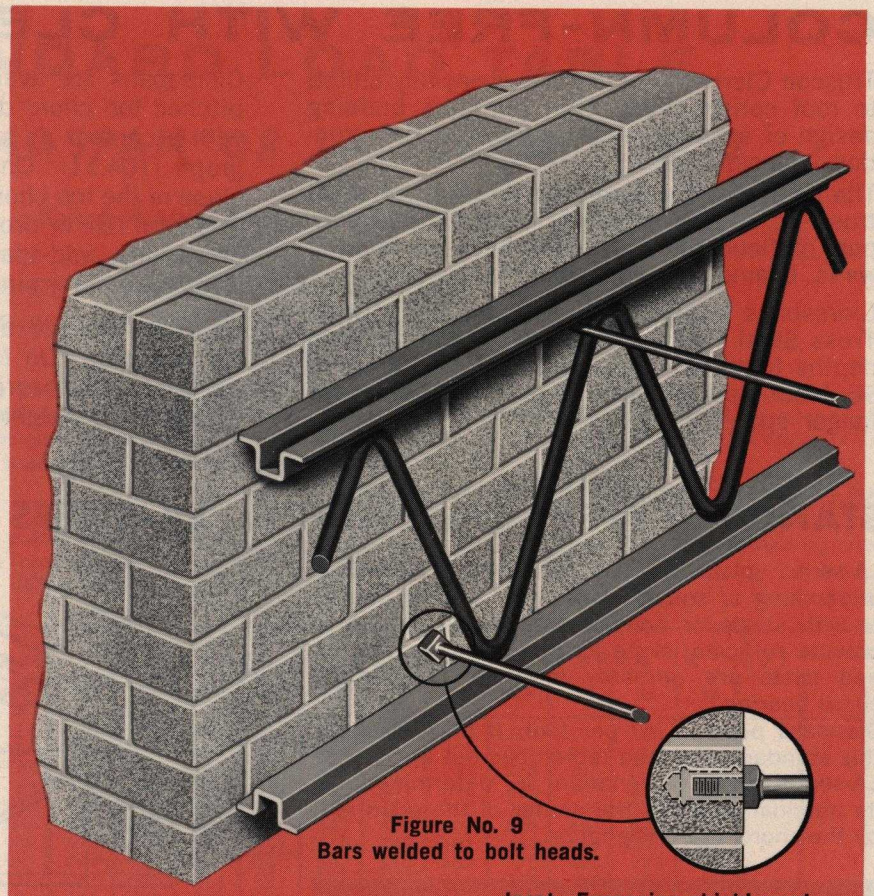


Figure No. 9
Bars welded to bolt heads.

Inset—Expansion shield used with masonry construction.

Figure No. 10
Wall Anchor used with steel construction.

COLUMN-FREE WITH CLERESPANS

Truscon Clerespan Joists are especially suited to roof construction. They permit a building design of space saving, column-free construction in most cases.

The LA-Series Clerespan is a Warren type steel truss. It is used primarily for the direct support of floor and roof slabs between bearing walls, beams or main structural members.

Clerespans supplement Truscon "O-T" Open Truss Steel Joists. They provide standardized depths from 18″ through 48″ in spans up to 96 feet. Special joists can be furnished for longer spans.

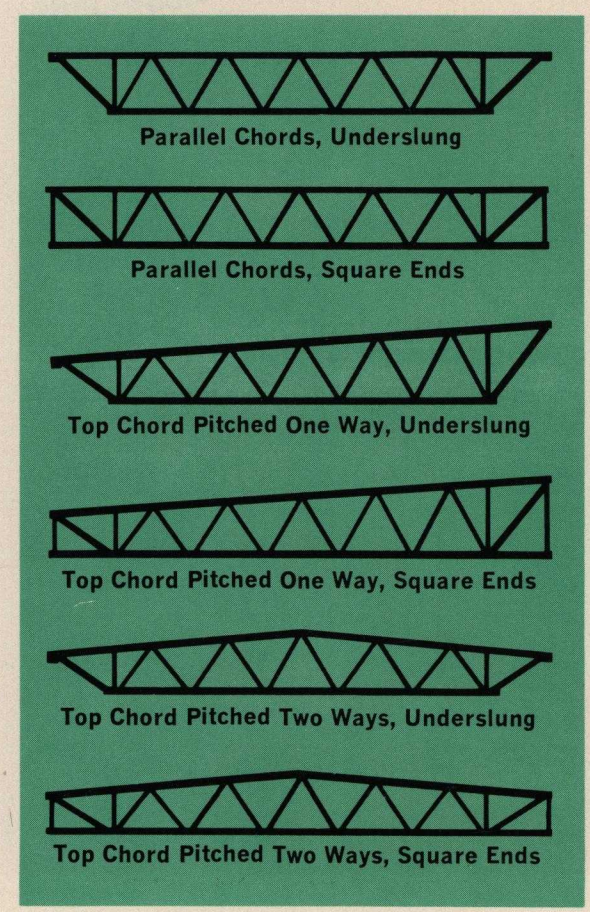
Clerespans are available in either parallel or pitched top chord design. They are fabricated with a camber as specified on Page 32, paragraph 104.11. On pitched clerespans, the slope of the top chord is a standard 8″ per foot. The total rise or drop of the top chord is measured from mid-span. Carrying capacity and weight are determined by the depth of the joist.

Both square end and underslung clerespans are available. On the underslung design, the depth of the bearing portion is 5″, or the approximate height of two courses of brick.

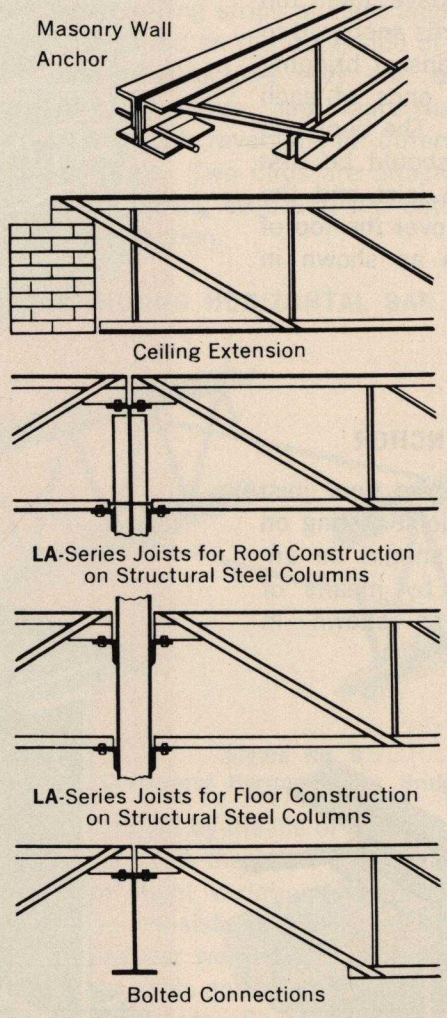
STANDARD TYPES, LA-SERIES

LA-series joists can be furnished with either underslung or square ends, with parallel chords or with single or double pitched top chords to provide sufficient slope for roof drainage. Square end joists are primarily intended for bottom chord bearing.

Standard pitch is ⅛″ per foot. If pitch exceeds this standard, the load table does not apply. The **LA**-series joist designation is determined by its nominal depth at the center of the span and by the chord size designation.


Parallel Chords, Underslung
Parallel Chords, Square Ends
Top Chord Pitched One Way, Underslung
Top Chord Pitched One Way, Square Ends
Top Chord Pitched Two Ways, Underslung
Top Chord Pitched Two Ways, Square Ends

LA-SERIES ACCESSORIES


Masonry Wall Anchor
Ceiling Extension
LA-Series Joists for Roof Construction on Structural Steel Columns
LA-Series Joists for Floor Construction on Structural Steel Columns
Bolted Connections

WELDED OR BOLTED CONNECTIONS

Where **LA**-Series Joists are supported on structural steel members, they are generally field welded. The number and length of welds should be specified. Where bolted connections are desired, round or slotted holes are provided in the bearing plates for this purpose. Holes are generally $^{13}/_{16}$″ diameter to receive a ¾-inch bolt.

STANDARD LOAD TABLE

FOR LONGSPAN OR LA-SERIES JOISTS

Based on Allowable Stress of 22,000 psi

Adopted by the American Institute of Steel Construction, Inc. — July 1, 1961
Adopted by the Steel Joist Institute — July 1, 1961

This table is based on 22,000 psi allowable stress for A36 steel. When A7, A245 or A303 steel is used, all load carrying capacities shall be reduced by 10 per cent. Joists designed of steel other than A36 shall be designated by L rather than LA as shown in the table.

The following table gives the TOTAL safe uniformly distributed load carrying capacities in pounds per linear foot of span.

This load table applies to joists with either parallel chords or standard pitched top chords. When top chords are pitched, the carrying capacities are determined by the nominal depth of the joists at center of the span.

Standard pitch is ⅛" per foot. If pitch exceeds this standard, the load table does not apply.

Loads below heavy stepped line are governed by maximum end reaction.

Joist Description	Approx. Wt. in Lbs. per Linear Ft.	Depth in Inches	Maximum End Reaction Lbs.	CLEAR OPENING OR NET SPAN IN FEET															
				25	26	27	28	29	30	31	32	33	34	35	36				
18LA02	13	18	4,031	314	295	278	263	248	235	222	211	200	190	181	172				
18LA03	14	18	4,549	354	334	315	297	281	266	252	239	227	216	205	196				
18LA04	16	18	5,493	428	402	378	355	335	316	299	283	268	255	241	228				
18LA05	17	18	5,970	465	438	413	390	369	349	331	314	298	283	270	257				
18LA06	19	18	7,135	556	522	490	462	435	411	388	368	348	330	312	295				
18LA07	21	18	7,648	596	574	540	508	479	453	428	406	385	364	344	326				
18LA08	23	18	8,334	649	625	602	581	547	516	487	461	436	414	393	373				
18LA09	25	18	8,611	671	646	623	601	581	562	530	502	475	450	428	406				
18LA10	27	18	9,217	718	691	666	643	621	601	582	550	520	493	468	444				
18LA11	29	18	9,539	743	715	690	665	643	622	602	584	567	550	523	497				
18LA12	31	18	10,216	796	766	739	713	689	666	645	625	607	589	573	544				
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
20LA03	14	20	4,703	366	347	328	311	295	280	266	253	241	230	219	209	200	191	183	175
20LA04	16	20	5,776	450	424	400	377	357	338	320	304	288	274	261	249	237	226	216	207
20LA05	17	20	6,177	481	455	431	408	387	368	349	332	316	301	287	274	262	251	240	230
20LA06	19	20	7,349	573	551	520	491	464	439	416	395	375	356	339	323	308	294	281	269
20LA07	21	20	7,887	615	591	570	539	510	483	458	435	413	393	374	357	340	325	311	297
20LA08	23	20	8,525	664	639	616	595	575	556	526	498	473	449	427	406	387	369	352	337
20LA09	25	20	9,063	706	680	655	632	611	591	572	542	515	489	465	442	422	402	384	367
20LA10	27	20	9,552	744	716	690	666	644	623	603	585	567	538	511	486	463	441	421	402
20LA11	29	20	10,129	789	760	732	707	683	661	640	620	602	584	568	541	515	492	470	449
20LA12	31	20	10,692	833	802	773	746	721	697	675	655	635	617	600	583	568	541	516	493
20LA13	36	20	11,587	903	869	838	808	781	756	732	709	688	669	650	632	615	599	584	570
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
24LA04	16	24	5,333	317	303	289	277	265	254	243	233	224	215	207	199	191	184	177	171
24LA05	17	24	5,693	338	324	311	298	286	274	264	253	244	235	226	218	210	202	195	188
24LA06	19	24	6,942	412	394	376	360	344	330	316	303	291	280	269	259	249	240	231	223
24LA07	21	24	7,606	452	432	413	395	379	363	348	334	321	308	296	285	275	265	255	246
24LA08	23	24	8,892	528	504	481	459	439	420	402	385	369	354	340	327	314	302	291	280
24LA09	25	24	9,668	574	548	523	499	477	457	437	419	402	386	370	356	342	329	317	306
24LA10	27	24	10,199	606	588	572	556	531	508	485	465	445	427	409	393	378	363	350	337
24LA11	29	24	10,791	641	623	605	589	573	558	535	512	491	472	453	435	419	403	388	374
24LA12	31	24	11,595	689	669	650	632	616	600	585	570	546	524	503	483	464	446	429	413
24LA13	36	24	12,753	758	736	715	696	677	660	643	627	612	598	584	571	549	528	507	486
24LA14	38	24	13,290	790	767	745	725	706	687	670	654	638	623	609	595	582	570	546	524
				41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
28LA06	19	28	6,530	313	302	291	281	271	262	253	244	236	228	221	214	207	201	194	188
28LA07	21	28	7,156	343	331	319	308	298	288	278	269	260	251	243	236	228	221	215	208
28LA08	23	28	8,390	403	388	373	359	346	334	322	311	300	290	281	272	263	254	246	239
28LA09	25	28	9,126	438	422	406	391	377	364	351	339	327	316	306	296	286	277	269	260
28LA10	27	28	10,239	491	472	454	437	421	406	391	377	364	351	340	328	317	307	297	288
28LA11	29	28	11,147	535	515	496	478	461	445	429	414	400	387	374	362	350	339	329	319
28LA12	31	28	12,180	585	571	558	537	517	498	480	463	447	432	417	403	390	377	365	354
28LA13	36	28	13,539	650	635	620	606	593	580	568	548	529	511	494	477	462	447	432	419
28LA14	38	28	14,302	687	670	655	640	626	613	600	588	576	565	545	526	509	491	473	457
28LA15	43	28	14,776	709	693	677	662	647	633	620	607	595	583	572	561	551	531	512	494

Figures printed in green to be used for roof construction only.

The weight of dead loads, including weight of joists, must in all cases be deducted to determine the live load carrying capacities which must be reduced for concentrated loads. Approximate weights per linear foot of joists include accessories.

When holes are required in top or bottom chords, the above carrying capacities must be reduced in proportion to reduction of chord areas.

The top chords are considered as being stayed laterally by floor slab or roof deck.

STANDARD LOAD TABLE LA-SERIES

Based on Allowable Stress of 22,000 psi

Joist Description	Approx. Wt. in Lbs. per Linear Ft.	Depth in Inches	Maximum End Reaction Lbs.	CLEAR OPENING OR NET SPAN IN FEET															
				49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
32LA07	21	32	6,800	274	266	258	250	243	236	229	223	217	211	205	199	194	189	184	179
32LA08	23	32	8,003	322	312	302	293	284	275	267	259	252	245	238	231	225	218	212	207
32LA09	25	32	8,705	351	340	329	319	309	300	291	282	274	266	259	252	245	238	232	225
32LA10	27	32	9,796	394	382	369	358	346	336	326	316	306	297	289	280	272	265	258	250
32LA11	29	32	10,637	428	415	402	390	378	367	356	346	336	326	317	308	300	291	284	276
32LA12	31	32	12,034	485	469	454	439	426	413	400	388	376	365	355	345	335	326	317	308
32LA13	36	32	14,043	565	554	537	520	504	488	473	459	445	432	420	408	396	385	375	365
32LA14	38	32	15,061	606	595	583	572	561	543	526	510	495	480	465	452	439	426	414	403
32LA15	43	32	15,878	639	627	615	603	592	581	570	560	551	532	514	498	482	466	452	438
32LA16	48	32	17,314	697	683	670	657	645	633	622	611	600	590	580	571	562	553	535	519
				57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
36LA08	23	36	7,685	267	259	252	246	239	233	227	221	216	210	205	200	195	190	186	182
36LA09	25	26	8,359	290	282	275	267	260	254	247	241	235	229	223	218	213	207	203	198
36LA10	27	36	9,437	327	318	309	301	293	285	277	270	263	256	250	244	238	232	226	221
36LA11	29	36	10,215	354	345	336	327	318	310	302	295	287	280	273	267	260	254	248	242
36LA12	31	36	11,596	402	391	380	370	360	350	341	332	324	315	307	300	292	285	278	271
36AL13	36	36	13,709	475	462	450	437	426	414	403	393	383	373	364	355	346	337	329	321
36LA14	38	36	15,398	534	519	504	490	476	463	450	438	427	415	405	394	384	375	365	356
36AL15	43	36	16,744	581	571	561	552	537	522	509	495	482	467	453	440	428	416	404	393
36LA16	48	36	18,396	638	627	617	606	597	587	578	569	560	546	532	518	505	493	479	466
36LA17	54	36	19,598	680	668	657	646	636	625	616	606	597	588	579	571	563	555	541	528
				65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
40LA09	25	40	8,061	246	240	234	229	224	218	214	209	204	200	195	191	187	183	179	175
40LA10	27	40	9,131	278	271	265	258	252	246	241	235	230	225	220	215	210	205	201	197
40LA11	29	40	9,851	300	293	286	280	273	267	261	255	250	244	239	234	229	224	219	214
40LA12	31	40	11,224	342	334	325	318	310	303	296	289	283	276	270	264	258	253	247	242
40LA13	36	40	13,269	404	394	385	376	367	358	350	342	334	327	319	312	306	299	293	286
40LA14	38	40	14,948	455	444	433	422	412	402	392	383	374	365	357	349	341	333	326	319
40LA15	43	40	16,801	512	499	487	475	464	453	442	432	422	412	403	394	385	375	366	357
40LA16	48	40	18,977	578	569	561	553	539	527	514	502	491	479	468	458	448	438	428	419
40LA17	54	40	20,338	619	610	601	592	584	576	568	560	552	540	527	516	504	493	482	472
40LA18	61	40	22,010	670	660	651	641	632	623	614	606	598	590	582	574	567	560	553	540
				73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
44LA10	27	44	8,864	241	235	230	226	221	216	212	207	203	199	195	191	187	184	180	177
44LA11	29	44	9,528	259	253	248	243	238	233	229	224	220	215	210	205	201	197	192	188
44LA12	31	44	10,896	296	289	283	277	271	266	260	255	250	245	240	235	230	226	222	217
44LA13	36	44	12,880	350	342	335	328	321	314	308	302	295	290	284	278	273	267	262	257
44LA14	38	44	14,555	395	386	378	370	361	354	346	339	332	325	318	312	305	299	293	287
44LA15	43	44	16,342	444	434	425	416	407	398	390	382	374	366	359	352	345	338	331	325
44LA16	48	44	19,024	516	505	494	484	473	463	453	444	435	426	417	409	401	393	385	378
44LA17	54	44	21,040	571	564	556	544	533	521	510	500	489	479	470	460	451	442	434	425
44LA18	61	44	22,872	621	613	605	597	589	582	574	567	560	553	542	531	520	509	499	489
44LA19	68	44	24,621	668	659	651	642	634	626	618	610	603	596	589	582	575	568	562	555
				81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
48LA11	29	48	9,234	226	222	217	212	208	203	199	195	191	187	183	179	176	172	169	166
48LA12	31	48	10,601	260	255	250	245	240	236	231	227	223	219	215	211	207	203	199	195
48LA13	36	48	12,350	307	301	295	290	284	279	274	269	264	259	254	250	245	240	236	231
48LA14	38	48	14,204	348	341	334	328	321	315	309	303	297	292	286	281	276	271	266	261
48LA15	43	48	15,930	390	383	375	368	361	354	347	341	335	328	322	317	311	305	300	295
48LA16	48	48	18,550	454	445	437	428	420	412	404	397	389	382	375	368	362	355	349	343
48LA17	54	48	20,875	511	501	491	482	473	464	455	446	438	430	422	415	407	400	393	386
48LA18	61	48	23,735	581	574	567	561	550	539	528	518	508	498	489	480	471	462	454	445
48LA19	68	48	25,460	624	616	609	601	594	588	581	574	568	562	555	545	535	525	515	506

Figures printed in green to be used for roof construction only.

The weight of dead loads, including weight of joists, must in all cases be deducted to determine the live load carrying capacities which must be reduced for concentrated loads. Approximate weights per linear foot of joists include accessories.

When holes are required in top or bottom chords, the above carrying capacities must be reduced in proportion to reduction of chord areas.

The top chords are considered as being stayed laterally by floor slab or roof deck.

STANDARD SPECIFICATIONS

FOR OPEN WEB STEEL JOISTS – LONGSPAN OR LA-SERIES

Adopted by the American Institute of Steel Construction, Inc., July 1, 1961
Adopted by the Steel Joist Institute, July 1, 1961

SECTION 100. SCOPE

These specifications cover the design, manufacture and use of Open Web Steel Joists, Longspan or **LA**-Series, in any structure to be erected subject to the provisions of these specifications.

SECTION 101. DEFINITION

The term "Open Web Steel Joists, Longspan or **LA**-Series" as used herein refers to lightweight steel trusses suitable for the direct support of floors and roof decks between the masonry walls and/or structural supports in buildings, and designed in accordance with these Standard Specifications and the Load Table on pages 27 and 28.

SECTION 102. MATERIALS

102.1 STEEL

The steel used shall conform to one of the following current Standard Specifications of the American Society for Testing Materials:

(a) Structural Steel, Designation A36.

(b) Steel for Bridges and Buildings, Designation A7.

(c) Flat Rolled Carbon Steel Sheets of Structural Quality, Designation A245, Grade C.

(d) Hot Rolled Carbon Steel Strip of Structural Quality, Designation A303, Grade C.

102.2 PAINT

Joists and accessories shall receive one shop coat of protective paint of a type standard with the manufacturer.

SECTION 103. DESIGN AND MANUFACTURE

103.1 METHOD

Joists shall be designed as simply supported uniformly loaded trusses in accordance with these specifications.

Where any feature or application is not specifically covered herein, the design shall be in accordance with the following specifications:

(a) American Institute of Steel Construction Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, where the materials conform to ASTM-A7 or A36.

(b) American Iron and Steel Institute Specifications for the Design of Light Gage Cold Formed Steel Structural Members, for members which are cold-formed from sheet or strip conforming to ASTM-A245 or A303.

103.2 UNIT STRESSES

The components of Steel Joists shall be so proportioned that the unit stresses in pounds per square inch shall not exceed the following:

(a) **Tension:**

Where material conforms to ASTM-A36..... 22,000

Where material conforms to ASTM-A7, A245 or A303..... 20,000

(b) **Compression:**

Where material conforms to ASTM-A36:
For members with ℓ/r not greater than 120. $19{,}000 - 0.625(\ell/r)^2$

Where material conforms to ASTM-A7:
For members with ℓ/r not greater than 120. $17{,}000 - 0.485(\ell/r)^2$

Where material conforms to ASTM-A36 or A7:
For members with ℓ/r greater than 120 but not over 200.....

$$\frac{18{,}000}{1+\dfrac{(\ell/r)^2}{18{,}000}}\left[1.6-\frac{\ell}{200r}\right]$$

Where materials conform to ASTM-A245 or A303:
For members with ℓ/r less than 132..... $17{,}000-0.485(\ell/r)^2$

For members with ℓ/r equal to or greater than 132 but not over 200..... $\dfrac{149{,}000{,}000}{(\ell/r)^2}$

in which "ℓ" is the unsupported length and "r" is the corresponding least radius of gyration of the member or any components thereof, both in inches.

(c) **Bending** (except as specified in Section 103.4(a)):
Where material conforms to ASTM-A36..... 22,000
Where material conforms to ASTM-A7, A245 or A303..... 20,000

(d) **Weld Stresses:**

Shear at throat of fillet welds..... 13,600

Tension or compression at throat of butt welds:

Where material conforms to ASTM-A36..... 22,000

Where material conforms to ASTM-A7, A245 or A303..... 20,000

Shear at throat of butt welds:

Where material conforms to ASTM-A36..... 14,300

Where material conforms to ASTM-A7, A245 or A303..... 13,000

103.3 SLENDERNESS RATIO

Maximum for top chords of joists..... 120

Maximum for all other compression members 200

Maximum for tension members..... 240

103.4 MEMBERS

(a) **Chords**

The bottom chord shall be designed as an axially loaded tension member.

The top chord shall be designed as a continuous member subject to combined axial compressive and bending stresses and shall be so proportioned that the quantity $\frac{f_a}{F_a}+\frac{f_b}{F_b}$ does not exceed unity.

In which

F_a = permissible axial unit stress

F_b = permissible bending unit stress

f_a = actual axial unit stress

f_b = actual bending unit stress

Where material conforms to ASTM-A36, F_b may be taken as 22,000 psi and 26,400 psi at mid-panel and at panel point, respectively. Where material conforms to ASTM-A7, A245 or A303, the corresponding permissible bending stresses shall be 20,000 psi and 24,000 psi.

The unsupported length of top chord, for the purpose of computing the permissible axial compressive stress at mid-panel and at panel point shall be considered equal to the panel length and half the panel length, respectively.

The radius of gyration of the top chord about its vertical axis shall be not less than $\ell/200$ where "ℓ" is the maximum permissible spacing of bridging in inches as specified in Section 104.5(b).

The top chord shall be considered as stayed laterally by the floor or roof deck provided the requirements of Section 104.9(e) of these specifications are met.

(b) **Web**

The vertical shear to be used in the design of web members shall be determined from full uniform loading, except that it shall not be less than 20% of the rated end reaction at mid-span (L/2) and shall be increased linearly to 30% of the rated end reaction at a distance of 0.35L from the end supports.

(c) **Depth**

The depth of sloping chord joists, for the purpose of design, shall be the depth at mid-span.

(d) **Bearings**

The bearing area shall be proportioned so that the unit bearing pressure in pounds per square inch does not exceed the following values:

On masonry laid in cement mortar..... 250 psi

On poured concrete..... 600 psi

Thickness of bearings shall be proportioned so that the bending stress in pounds per square inch does not exceed 20,000 for A7, A245 or A303 steel and 22,000 for A36 steel.

(e) **Fillers or Battens**

Chord and web members in compression, composed of two components separated one from another, shall have fillers or battens spaced so that the ratio ℓ/r for each component shall not exceed the ratio ℓ/r of the whole member. Chord and web members in tension, composed of two components separated one from the other, shall have fillers or battens spaced so that the ratio ℓ/r of each component shall not exceed 240. The least "r" shall be used in computing the ratio ℓ/r of a component.

Fillers or battens may be omitted in webs composed of two components in joists 28 inches or less in depth provided the least "r" is used in the computation of the member.

(f) **Extended Ends**

Extended ends shall be designed as cantilever beams with their reactions carried back at least to the first interior panel point of the joist.

(g) **Cold-Formed Members**

The nominal cross-section of members, cold-formed from sheet or strip steel conforming to ASTM-A245 or A303, may be of any suitable shape, but no member shall have an unstiffened projecting compression element of width greater than 10 times its thickness, where width is measured from the free edge of the element to the toe of the bend which joins the element to the remainder of the cross-section. The width-to-thickness ratio may exceed 10 but not 28.4, provided the projecting element is stiffened at its free edge by a simple lip at right angles to the element. The over-all depth of the lip shall be not less than the applicable value given in the following table in

which "w" is the width of the element and "t" is the thickness of the material, both in inches:

Width-to-Thickness Ratio of Stiffened Element w/t	Minimum Depth of Stiffening Lip
10 or less	0.00
Over 10 thru 13	4.80 t
14	5.40 t
15	5.82 t
16	6.15 t
17	6.42 t
18	6.65 t
19	6.86 t
20	7.05 t
21	7.23 t
22	7.40 t
23	7.55 t
24	7.70 t
25	7.84 t
26	7.97 t
27	8.10 t
28	8.22 t
28.4	8.27 t

103.5 CONNECTIONS

(a) **Method**

Joist members shall be connected directly to one another by welding in accordance with the current Standard Code for Arc and Gas Welding in Building Construction of the American Welding Society or by other approved methods.

(b) **Strength**

Connections shall develop the design stress but not less than 50% of the allowable strength of the member.

(c) **Splices**

Splices may occur at any point in chord or web members and shall develop the full strength of the member.

(d) **Eccentricity**

Members connected at a joint shall have their center of gravity lines meet at a point, if practical. Eccentricity on either side of the neutral axis of chord members, may be neglected when it does not exceed the distance between the neutral axis and the back of the chord. Otherwise, provision shall be made for the stresses due to eccentricity. Ends of joists shall be proportioned to resist bending produced by eccentricity at the support.

SECTION 104. APPLICATION

104.1 USAGE

These specifications shall apply to any type of structure where floors and roof decks are to be supported directly by steel joists installed as hereinafter specified. Where joists are used other than on simple spans under uniformly distributed loading, as prescribed in Section 103.1, they shall be investigated and modified if necessary to make their design conform to the specifications listed in Section 103.1.

104.2 SPAN

The clear span shall not exceed 24 times their depth. In floor construction, for spans greater than 32 feet, the span shall not be greater than 20 times the depth of the joist.

104.3 DEPTH

The nominal depth of sloping chord joists shall be the depth at mid-span.

104.4 END SUPPORTS

The ends of joists shall extend a distance of not less than 6 inches over masonry or poured concrete supports and not less than 4 inches over steel supports.

104.5 BRIDGING

(a) **Diagonal**

Bridging shall consist of cross-bracing with ℓ/r ratio of not more than 200 where "ℓ" is the distance in inches between connections and "r" is the least radius of gyration of the bracing member. Where cross-bracing members are connected at their point of intersection, the "ℓ" distance shall be taken as the distance in inches between connections at the point of intersection of the bracing members and the connections to the chord of the joists.

(b) **Spacing**

The maximum spacing of lines of bridging for the different chord sizes shall not exceed the values tabulated below:

Chord Size	Maximum Spacing of Lines of Bridging
No. 02 to No. 08, incl.	10′-0″
No. 09 to No. 16, incl.	12′-0″
No. 17 to No. 19, incl.	16′-0″

104.6 INSTALLATION OF BRIDGING

All bridging shall be completely installed before any construction loads are placed on the joists, except the weight of the workmen necessary to install the bridging.

Bridging shall support the top chords against lateral movement during the construction period and shall hold the steel joists in an approximately vertical plane.

The ends of all bridging lines terminating at walls or beams shall be anchored thereto at top and bottom chords.

104.7 END ANCHORAGE

(a) **Masonry Supports**

Joists resting on masonry walls shall be bedded in mortar and attached thereto with an anchor equivalent to a ¾-inch round steel bar not less than 12 inches long. In roofs where masonry parapet walls are less than 2 feet high, two ¾-inch anchor bolts or other equal means shall be used in lieu of the steel bar.

(b) **Steel Supports**

Ends of joists resting on steel supports shall be connected thereto with not less than two ¾-inch bolts or welds of equal strength.

(c) **Uplift**

Where uplift forces are a design consideration, roof joists shall be anchored to resist such forces.

104.8 JOIST SPACING

Joists shall be so spaced that the loading on each joist does not exceed the allowable load given for the particular designation and span in the Load Table. The spacing shall not exceed the safe span of the deck or slab.

104.9 FLOORS AND ROOF DECKS

(a) **Material**

Floors and roof decks may consist of poured or precast concrete or gypsum, formed steel, wood plank, or other suitable material capable of supporting the required load at the specified joist spacing.

(b) **Thickness**

Poured slabs shall not be less than 2 inches thick.

(c) **Centering**

Centering for poured slabs may be ribbed metal lath, corrugated steel sheets, paper-backed welded wire fabric, removable centering or any other suitable material capable of supporting the slab at the designated joist spacing. Centering shall not cause lateral displacement of the top chord of joists during installation of the centering or placing of the concrete.

(d) **Bearing**

Slabs or decks shall bear uniformly along the top chords of the joists.

(e) **Attachments**

Attachments of slab or deck to top chords of joists, where required, shall be capable of staying the top chords laterally. The spacing of such attachments along the top chords of joists shall not exceed 36 inches.

(f) **Wood Deck**

Wood decking when placed over joists shall not have a span exceeding that which is standard practice for allowable safe loading of the particular grade and dimension of the decking employed. All such wood decks shall be securely fastened to the joists.

(g) **Wood Nailers**

Where wood nailers are used, such nailers in conjunction with the deck or slab shall be firmly attached to the top chords of the joists in conformance with 104.9(e).

104.10 DEFLECTION

The deflection due to the design live load shall not exceed 1/360 of the span.

104.11 CAMBER

Joists shall have approximate cambers in accordance with the following:

Top Chord Length	Approximate Camber
30′-0″	⅜″
40′-0″	⅝″
50′-0″	1⅛″
60′-0″	1½″
70′-0″	2⅛″
80′-0″	2¾″
90′-0″	3½″
96′-0″	4″

104.12 INSPECTION

All steel joists shall be thoroughly inspected by the manufacturer before shipment to insure compliance of materials and workmanship with the requirements of these specifications. If the purchaser wishes an inspection of the steel joists by someone other than the manufacturer's own inspectors, he may reserve the right to do so in his "Invitation To Bid" or the accompanying "Job Specifications." Arrangements shall be made with the manufacturer for such inspection of the joists at the manufacturing shop by the purchaser's inspectors at purchaser's expense.

SECTION 105. HANDLING AND ERECTION

Care shall be exercised at all times to avoid damage through careless handling during unloading, storing and erecting. Dumping onto the ground shall not be permitted.

As soon as joists are erected, all bridging shall be completely installed and the joists permanently fastened into place before the application of any loads.

Hoisting cables shall not be released until one bridging line nearest mid-span for spans of up to sixty feet, and two bridging lines nearest the third points of the span for spans of over sixty feet are installed and where joists are bottom bearing, their ends have been restrained laterally.

During the construction period, the contractor shall provide means for the adequate distribution of concentrated loads so that the carrying capacity of any joist is not exceeded.

ADVANTAGES OF TRUSCON "CLERESPAN" JOIST CONSTRUCTION

(LA-SERIES)

PRIMARY USE

"Clerespan" Steel Joists, as the name implies, are intended primarily for use as joists to directly support a slab or deck without the use of intermediate supports. Under certain conditions, "Clerespans" can be used to support joists, purlins or wood rafters, providing the method of attachment to the "Clerespans" is adequate. The joists, purlins or wood rafters must be spaced so that excessive bending stresses are not produced in the chord members. Bridging members of sufficient size should be used to provide ample bracing. In all cases it is imperative that a careful study be made of these factors to assure an adequate structural design.

DESIGN

Fundamentally, a Truscon "Clerespan" Steel Joist is a Warren truss having top and bottom chords each composed of two hot rolled angles. Webs are made of plain round bars or angles, rounds for 18″ and 20″, angles for all other depths. Truscon "Clerespan" Steel Joists are designed in accordance with the standard specifications of the Steel Joist Institute for Longspan Joists. Top chords are designed for bending between panel points as well as for direct compression. All connections are positively secured by means of electric arc welding. These joists are fabricated in a modern shop with the latest equipment available, and are given a thorough inspection to insure a product of highest quality and uniform workmanship. The favorable acceptance and widespread use of Truscon "Clerespan" Steel Joists for over a quarter of a century have demonstrated their all-around versatility.

EASILY INSTALLED

The wide top and bottom chords provide unusual lateral stability, which together with their light weight result in a complete structural member which can be easily and economically installed.

The open web system allows the passage of pipes and conduits of practically any size and in any direction within the depth of the joists.

ELIMINATE COLUMNS

The long spans provided by Truscon "Clerespan" Joists eliminate the necessity for intermediate columns and permit rearrangement of office partitions, display counters, stocks, etc., as well as to permit the unobstructed use of large floor areas for garages, bowling alleys and other similar buildings.

CONSTRUCTION ECONOMY

The shallow depth of Truscon "Clerespan" Joists facilitates the design of pleasing architectural lines for exterior building elevations and at the same time provides a saving in masonry work by reducing the required height of building walls.

By using pitched top chords (standard pitch is ⅛″ per foot) adequate roof drainage can be provided and, when so desired, a level ceiling can be effected by attachment directly to the underside of the "Clerespan" Joists.

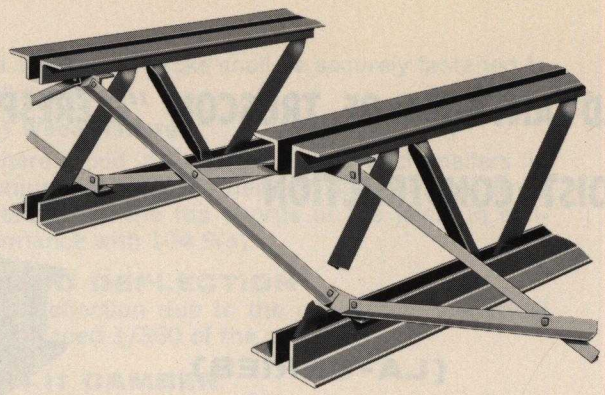
WOOD NAILING STRIPS

EASILY ATTACHED IN FIELD

When it is desired to attach a wood floor or roof directly to the "Clerespan" Joists, this can be accomplished by bolting wood nailer strips to the top chords of the joists (in the field). Holes for insertion of bolts through the wood nailing strip should be countersunk sufficiently to prevent bolt heads from projecting above the top surface of the wood nailer. The space between the top chord angles of the joists permits the use of bolts. Due to variations in the size of round or angle web members used between chord angles it is necessary that washers (2" x 1/8" or 3/16" recommended) be used in conjunction with bolts to provide a flat bearing surface against which the nuts may be tightened.

"Clerespan" Joists are bridged with a strut type of bridging made

"CLERESPAN" JOIST BRIDGING



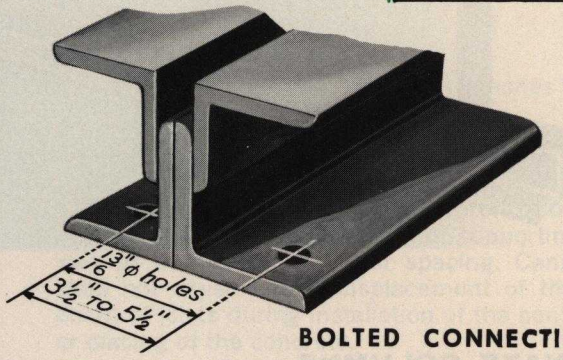
of hot rolled structural angles of 1¼" x 1¼" x ⅛" minimum size (the maximum $\frac{l}{r}$ shall not exceed 200), bolted securely to clip angles attached to the chord members. This type of bridging furnishes lateral support to the joists and distributes loads by acting both in tension and compression. Rows of bridging should be spaced in accordance with the following table.

The maximum spacing of lines of bridging for the different chord designations shall not exceed the values tabulated below:

Chord Designation	Max. Spacing of Lines of Bridging
No. 2 to No. 8 Inc.	10'-0"
No. 9 to No. 16 Inc.	12'-0"
No. 17 to No. 19 Inc.	16'-0"

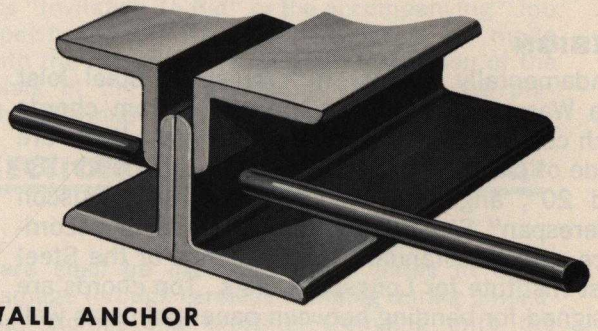
CLERESPAN JOIST BRIDGING TABLE

Size of Angle	1¼" x 1¼" x ⅛"	1½" x 1½" x ⅛"	2" x 1½" x ⅛"	2½" x 2" x 3/16"
Depth of Clerespans	Maximum Distance Center to Center of Clerespan			
18"	8'-6"	10'-2"	11'-2"	14'-6"
20"	8'-5"	10'-2"	11'-2"	14'-6"
24"	8'-5"	10'-1"	11'-1"	14'-6"
28"	8'-4"	10'-0"	11'-1"	14'-5"
32"	8'-3"	10'-0"	11'-0"	14'-4"
36"	8'-2"	9'-11"	10'-11"	14'-4"
40"	8'-0"	9'-9"	10'-10"	14'-3"
44"	7'-10"	9'-8"	10'-9"	14'-2"
48"	7'-9"	9'-6"	10'-7"	14'-1"



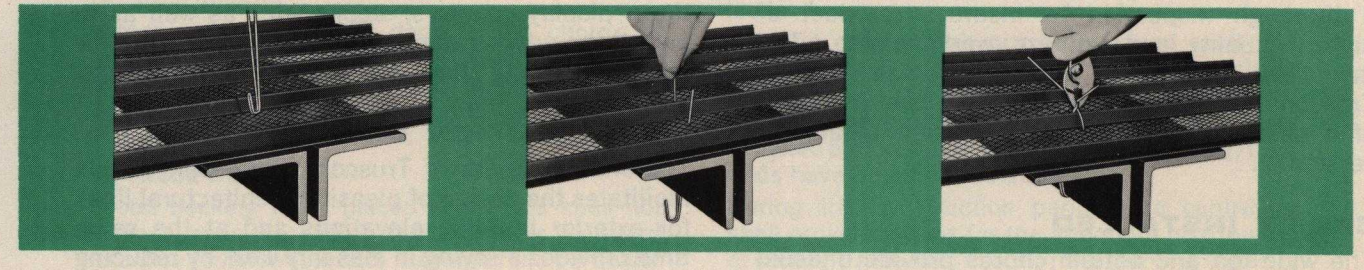
BOLTED CONNECTIONS

When "Clerespan" Joists are supported on structural steel members, it is generally desired to have a bolted connection. Holes can be provided in the ends of "Clerespan" Joists for this purpose.



WALL ANCHOR

Where the supporting walls are of masonry construction, the ends of 'Clerespan" Joists should be anchored thereto by means of ¾" round bars as shown.

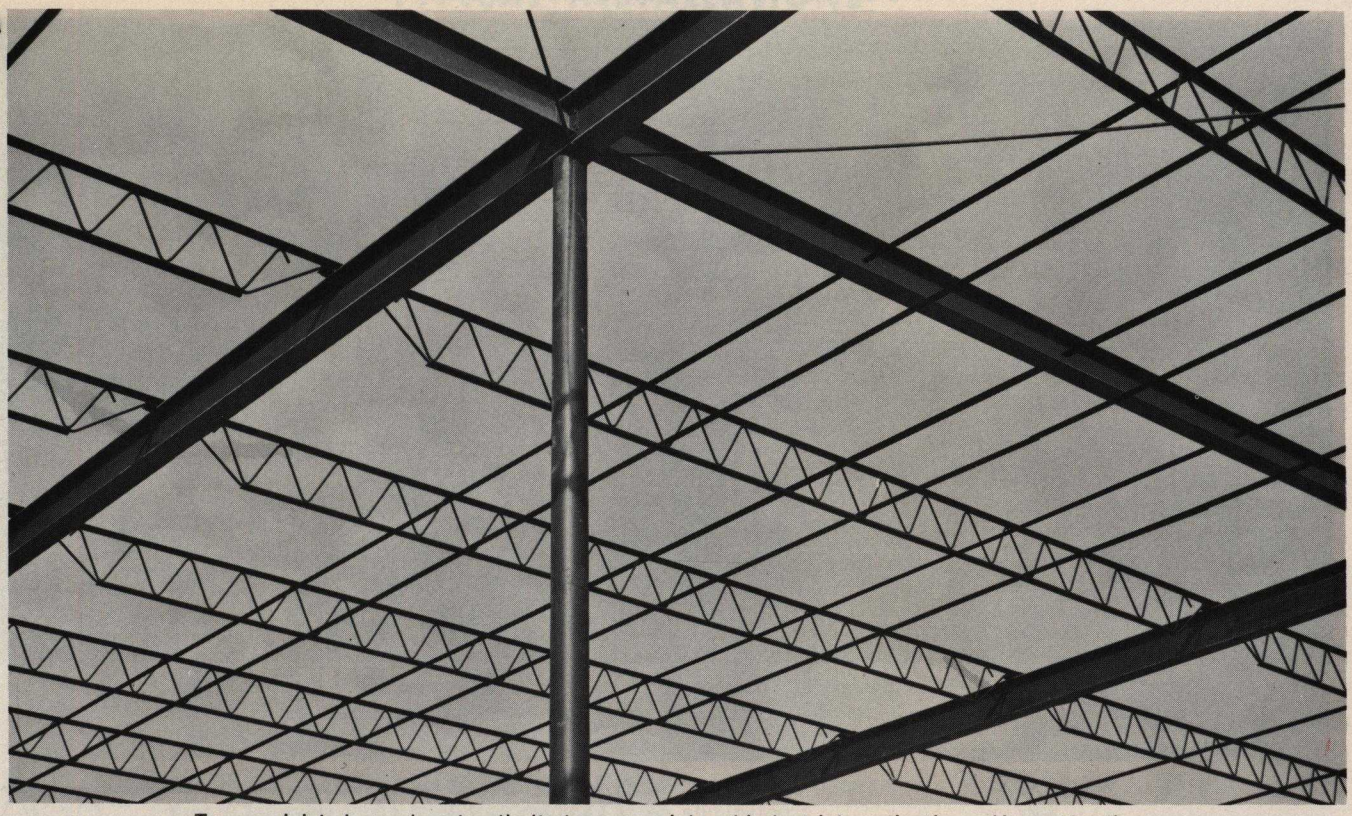


In "Clerespan" Joist construction the finished floor can be wood, cement or composition, as desired. The typical construction in which "Clerespan" Joists are used is that with a reinforced concrete top slab and a plastered ceiling, both supported by metal lath. This type of construction composed entirely of incombustible materials provides a high degree of fire resistance.

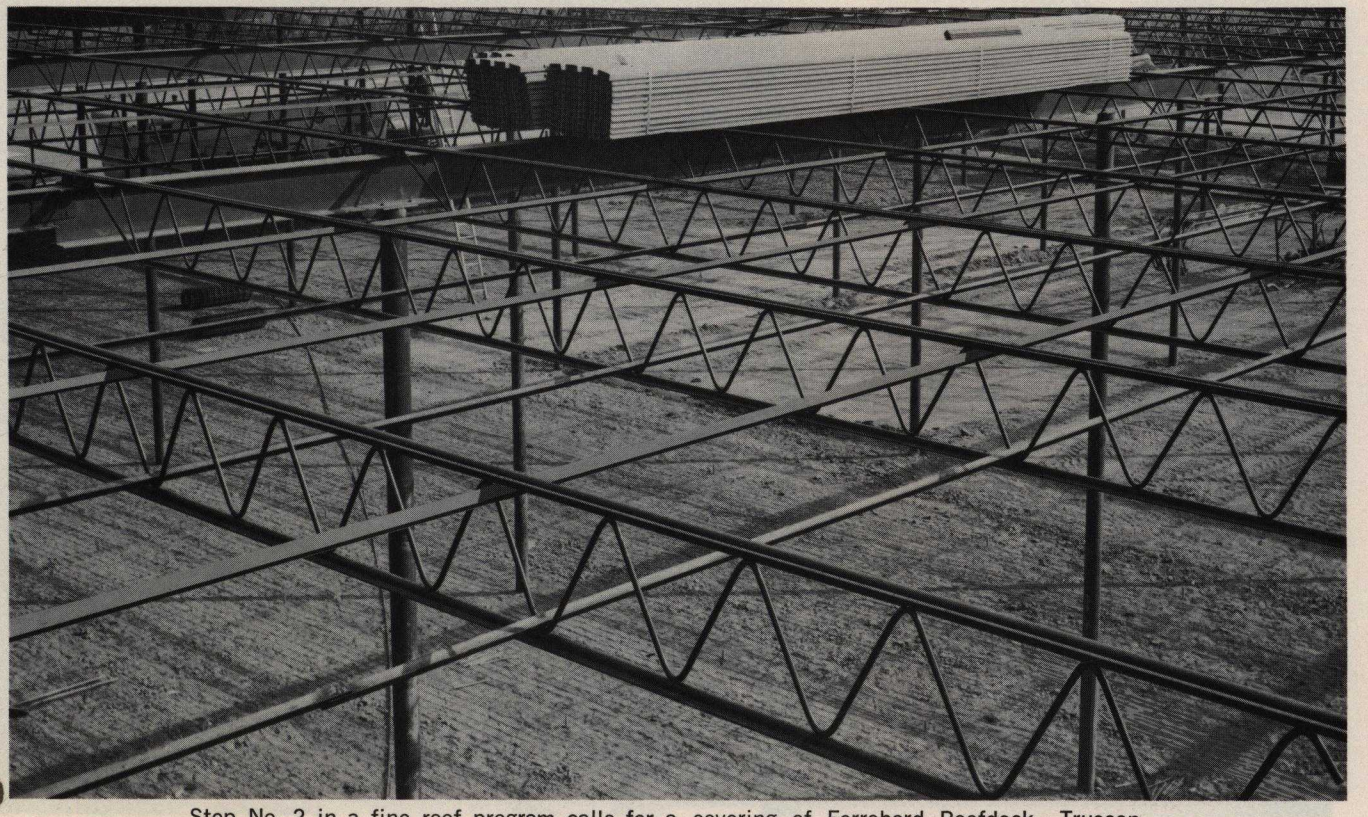
ATTACHING LATH CLIPS

The illustrations above show the three progressive steps in the attachment of metal lath to "Clerespan" Joists using Lath Clips.

TYPICAL INSTALLATIONS



Truscon joists have almost unlimited commercial and industrial applications. Here, a leading rubber manufacturer in Ohio has taken the first step in building a roof that will last.

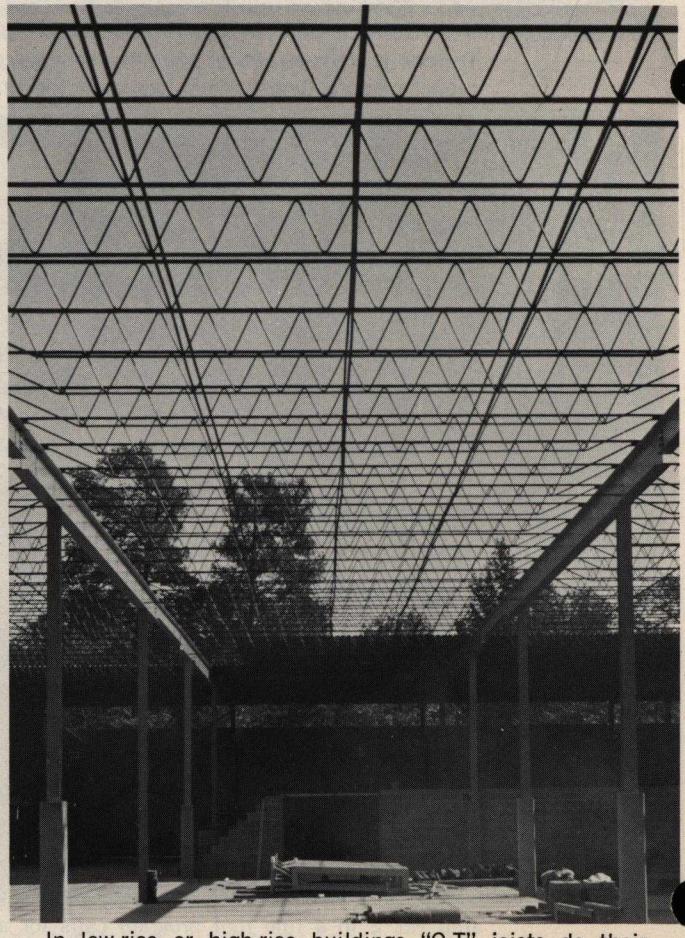


Step No. 2 in a fine roof program calls for a covering of Ferrobord Roofdeck. Truscon Joists and Deck are fabricated to go together easily and economically.

TYPICAL INSTALLATIONS

The pleasing symmetry of design of Truscon "O-T" joists adds an interesting decorative finish to this Minnesota warehouse. Electrical conduit, fixtures and plumbing pipes are easily attached.

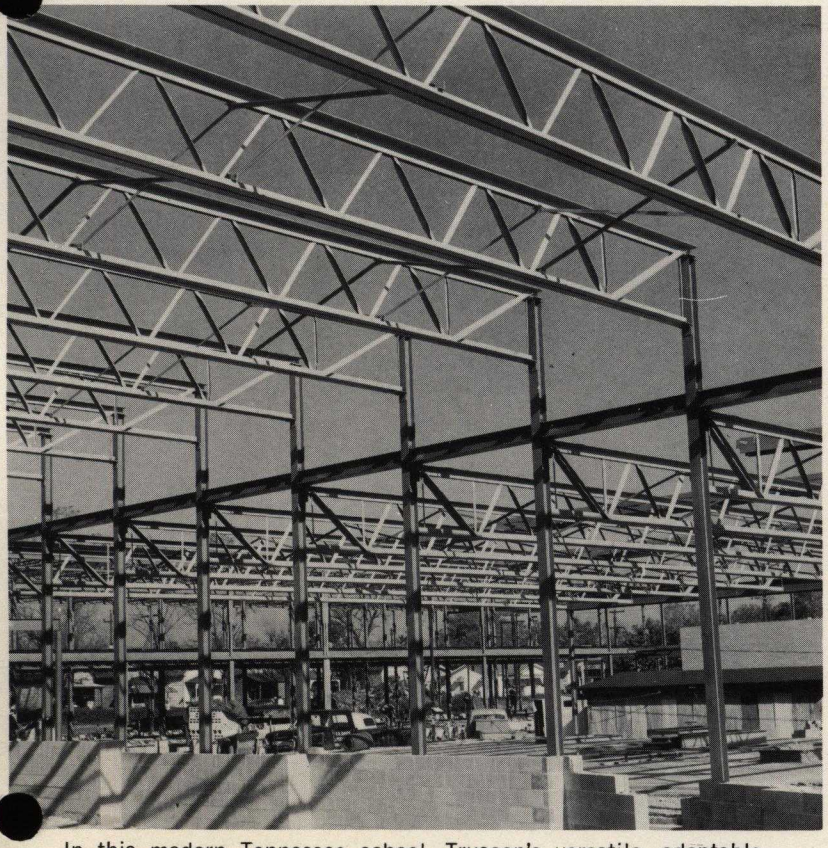
Plans called for early occupancy of this Pennsylvania office building. Faster erection was assured through the use of Truscon Joists.



In low-rise or high-rise buildings "O-T" joists do their jobs efficiently. This New Jersey printing plant has plenty of room for large presses and paper stock.

TYPICAL INSTALLATIONS

Plenty of unimpeded area for storing and handling of bulky materials in this Ohio lumber yard. Clerespan joists permitted columns to be eliminated.



In this modern Tennessee school, Truscon's versatile, adaptable Clerespans tie the frame together during construction and provide the final roof framing members.

This Pennsylvania school building relies on Truscon Clerespans to provide long, trouble-free building life.

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